

MILITARY INTELLIGENCE.

APRIL-JUNE 1981

V.7 I.2 C.1



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Military Intelligence
(USPS017-030)

Vol. 7, No. 2

Military Intelligence is published quarterly by the US Army Intelligence Center and School, Fort Huachuca, Arizona, 85613, under the provisions of Chapter 5 of AR 310-1 as a professional development resource for military and civilian intelligence personnel. Unless otherwise stated, the ideas presented do not represent the official policy or indorsement by any agency of the US Army or Department of Defense. Authors submitting articles for consideration are responsible for informing the staff of Military Intelligence of simultaneous submission and/or acceptance by other publications. Authors are also responsible for clearing their articles prior to submission if appropriate. Use of funds for printing Military Intelligence was approved by Department of the Army in December 1975. Second class postage paid at Sierra Vista, Arizona. Subscription rates: 1 year—\$6.00; foreign rates: 1 year—\$8.00.

April-June 1981

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from the Commander



The Air/Land Battle of the 1980s

by Brigadier General James A. Teal, Jr.

The graphic featured on the cover of this edition of *Military Intelligence* was taken from the thought-provoking article by General Donn A. Starry, Commander, TRADOC, which appeared in the March 1981 edition of *Military Review*. Titled "Extending the Battlefield," General Starry's article sets forth concepts and procedures for optimizing new combat capabilities and potentials and for conducting expanded, coordinated air/land combat operations in the 1980s. If you have not already read that article and TRADOC Pamphlet 525-5, US

Army Operational Concepts, The Air/Land Battle and Corps 86, dated 25 March 1981, I strongly urge you to read them and become thoroughly familiar with them now.

Today's technological revolution provides commanders with an ever-increasing array of new weapons systems and reconnaissance, surveillance and target acquisition (RSTA) capabilities and potentials which we must integrate and exploit fully today if we are to achieve victory in battle. The impact of technology upon military capabilities is exceptionally pronounced in the

application of intelligence and electronic warfare (IEW) support at the tactical (corps through battalion) level. We are well into that phase where we must plan for and execute, with ever-increasing rapidity, a parallel, orderly revolution in tactical IEW concepts and operations.

Intelligence and electronic warfare play an even more critical role in the concept for the extended air/land battle of the 1980s. We face significant challenges as we devise those organizational, operational and doctrinal concepts under which we will integrate and exploit, at the tactical level, the enormous capabilities afforded us by national, other echelon above corps (EAC) and new tactical IEW systems. We are now developing the automated systems, concepts and procedures under which we will: 1) maintain an intelligence data base; 2) perform EW and OPSEC support missions; 3) manage increasingly complex intelligence collection functions; 4) process an unprecedented volume of information into meaningful all-source combat information and intelligence, and 5) communicate the latter in near-real-time and in a functional format. Additionally, we are addressing the application of off-the-shelf acquisitions and the initiatives taken by field elements in an effort to accelerate the IEW automation process.

Many challenges remain, and new ones will arise, as we in the Military Intelligence community progress toward establishing the IEW capabilities required under the extended air/land battle concept. The July-September 1981 edition of *Military Intelligence* will address in detail the role of Military Intelligence in the implementation of that concept and identify future challenges and problems for your consideration and comment.

Feedback

CONUS Readers,

No Excuse Sir, an hour-long documentary on history and life at the United States Military Academy at West Point, will be presented on Friday, 14 August 1981 at 9:00 PM (Eastern) on Public Broadcasting Service. (Check your local listings.)

No Excuse Sir reveals life at the United States Military Academy at West Point with an historical perspective though interviews with faculty members, cadets studying at the Academy, Superintendent of West Point (through June, 1981) Lt. General Andrew Goodpaster, General William Westmoreland, General Maxwell Taylor, philosopher Henry Steele Commager, and *School for Soldiers* authors, Robert Moore and Joseph Ellis.

The film is a rich weave of footage showing the picturesque surroundings of the Military Academy set against the double-angle curve of the Hudson River amidst the Hudson Highlands; the cadets marching in cadence during parades and practice; and the world-famous United States Military Academy Marching Band shown with the cadets on the Plains and past graduates as they march on Founders Day. The music of the United States Military Academy Band is interspersed throughout the film along with the sounds of the Academy Glee Club. Old photographs, statues of Patton, George Washington, and MacArthur, and paintings by Frederic Remington embellish this award-winning production. This documentary reveals much about the daily life at the Academy—the rigors of the training and schooling for both men and now women.

For anyone who has become more curious about the 'Point' since the Iranian ex-hostages came here as their first stop and resting place on their return to the United States, this film is a must.

Editor,

Captain D. Mroczkowski's article *The Polish Struggle* (January-March 1981) invites comments on several points. In the first place, it was Joseph Stalin, not Adolph Hitler,

who contemptuously dismissed the political importance of the Roman Catholic Church with an inquiry about the number of military divisions under the Pope's command.

Second, I would suggest that the peacefulness and orderliness of the strikes did **not** undermine the Soviets' willingness or ability to intervene by removing the legitimizing excuse of chaos. The Soviet Union certainly exhibited no reservations about invading relatively peaceful Czechoslovakia in 1968. As Captain Mroczkowski later acknowledges, the Soviets recognized that the Poles would and could offer **protracted** and effective bloody resistance with the ultimate effects of 1) wrecking their own economy and the Soviet and Eastern European economies whose mutual interdependencies were institutionalized by the Soviets through COMECON, and 2) forcing the Soviet Union to assume Poland's \$21 billion debt to its Western creditors, a burden the Soviet economy can neither afford nor forego given its own inadequacies requiring the infusion of Western capital and technology. Hungary and Czechoslovakia rolled over and played dead before Hitler's onslaughts in the 1930s. The Soviets expected them to behave in similar fashion decades later. In other words, peacefulness did not and does not forestall Soviet aggression; on the contrary, it may heighten its likelihood.

Third, the author notes the expulsion of Yugoslavia from Cominform (1948) and the invasions of Hungary and Czechoslovakia, "all prove that the Soviet Union is highly intolerant of any liberalization within the Eastern Bloc." This statement stands in contradiction to the author's accurate description of Poland as the most liberal within the Soviet Bloc (page 18). A great deal of liberalization was allowed in Hungary and Czechoslovakia by the Soviets. What finally caused the Soviet interventions was not liberalization *per se* (Eastern Europe, especially Romania, is far more relaxed today than it was 20 or 30 years ago) but rather 1) the Soviets' belief that the local Communist party had lost control of the situation and 2) intimations by the satellites that they might withdraw from the Warsaw Pact, a position the Soviet Union would not tolerate.

Finally, the assertion that the Soviet Union needs a reliable Poland given its strategic position is most undoubtedly correct. However, the Soviets are in a no-win situation with Poland in that neither invasion nor non-intervention will ever erase Polish nationalism or the historical enmity between these peoples. Poland will never be a reliable Soviet ally regardless of the policies pursued by the latter. Whether the Soviets intend to use the Poles in a showdown with the West is another question. For an excellent discussion of this Warsaw Pact dilemma, see *Military Intelligence*, July-September 1979, pages 27-29, *The Warsaw Pact—A Soviet Dilemma*.

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Editor,

I would like to comment on two articles which interested me and which are related to each other: *The Role of the KGB in a Tactical Environment* and *GRU: Soviet Military Intelligence: How Significant?* appeared in the magazine's October-December 1980 and January-March 1981 issues, respectively.

First of all, I feel that the article on the KGB dealt more with the organization, structure and roles of the various components of the KGB than the article's title implied. I was looking more for the KGB's possible influence in the outcome of any future war between the Warsaw Pact and NATO. The article might have provided some open source examples of how the KGB directly affects the operations of certain Soviet units in East Germany or in some of the other Groups of Soviet Forces in Eastern Europe.

The article on the GRU gave some past and more recent examples of the GRU's successes in acquiring, by all possible means, information of strategic and tactical military importance concerning NATO. The article also stressed the GRU's steady and sometimes intense competition with the KGB, bringing to mind the plight of the *Abwehr*, Germany's military intelligence arm during World War

(continued on page 36)

Authors

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Ralph E. Geiselman is a consultant to Perceptronics, Inc. Since receiving his Ph.D. degree in experimental psychology from

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H. William Beuttel holds BA and MA degrees in history from Wichita State University, KS. A 1976 graduate of the MI Officer Basic and Tactical Intelligence Staff Officer Courses, Mr. Beuttel served three and a half years as an intelligence analyst and assistant brigade S2 and HQ, 2nd Brigade, 3rd Armored Division where his specialty was the 1st Guards Tank Army.

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LTC Ballard M. Barker is Chief, Corps Systems Branch, Materiel Division, Directorate

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CW2 Rex A. Williams is an imagery interpretation technician in Corps Systems Branch, Materiel Division, Directorate of Combat Developments, USAICS. He has previously served as an image interpreter with the 2d Military Intelligence Battalion (Aerial Recon Support) (MIBARS) in Germany, the 1st MIBARS at Fort Bragg, and the 704th MIDAS in Korea. He is currently the project officer for side-looking airborne radar systems at USAICS.

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Colonel Lasley graduated from the University of North Carolina with a BS in Industrial Relations and was commissioned through the Air Force Reserve Officer Training Corps in June 1959. After attending the Basic Meteorology Program at the University of Texas, he served as a Detachment Weather

Officer at Hunter Air Force Base, GA, and as Wing Weather Officer to the 2d Bomb Wing (SAC). Subsequent assignments include tours at Torrejon Air Base, Madrid, Spain; Offutt Air Force Base, NE; the Republic of Vietnam; and Deputy Chief of Staff/Operations Staff. He is currently the commander of the 7th Weather Squadron, US Army Europe. Colonel Lasley holds an MS in Meteorology from Florida State University. A graduate of the Air War College, his decorations include the Bronze Star Medal, Meritorious Service Medal with Oak Leaf Cluster, Air Force Commendation Medal with Oak Leaf Cluster, Air Force Outstanding Unit Award with Valor and one Oak Leaf Cluster, National Defense Service Medal, Vietnam Gallantry Cross with Palm Unit Citation, Vietnam Service Medal, and Air Force Longevity Service Award.

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Special Agent John MacCord is the Counterintelligence Reports Officer for the 500th MI Group at Camp Zama, Japan. S/A MacCord's past assignments include three years with the Pentagon Counterintelligence Force and two previous tours with the 500th in Hawaii (68-70) and Japan (71-74). He is a 1968 graduate of the Area Intelligence Specialist course at Fort Holabird, a 1971 graduate of the Japanese language course at DLI, and a 1975 graduate of the Counterintelligence course at Fort Huachuca. He has a Bachelor of Arts from the University of Maryland (1976), and is currently a candidate for the Master of Science degree in Public Policy Analysis from Southern Illinois University at Edwardsville completing a research paper on Russo-Japanese relations in the northern territories (the islands off the north coast of Hokkaido occupied by the Soviets since 1945).

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CW4 Boston has 22 years AFS and was appointed WO in May 1967. Mr. Boston joined WOD, MILPERCEN as the MIWO Career/Assignment Manager in January 1980 following a tour in West Berlin, Germany. Mr. Boston holds PMOS 972AOTHGM and AMOS 971AQ9L9K. He has served previous CONUS tours at

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A 1950 graduate of West Point, COL Rutherford holds a masters degree in Political Science from the University of Alabama. He is a graduate of the Air War College and was a visiting lecturer at the Joint Warfare Establishment, Old Sarum, Salisbury, United Kingdom. He was most recently the Chief of the Intelligence and Security Division, Fort Meade, MD, until his retirement in July, 1980.

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CPT Steven A. Frith, an ROTC instructor at Georgetown University in Washington, DC, was until recently Commander, Special Security Detachment, US Army Aviation Center and School, Fort Rucker, AL. He received a BA from the University of Colorado and is currently working toward an MS from the University of Southern California. Other assignments include service in Germany with the 1st Armored Division and the 2d Armored Division Forward.

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MAJ V. Paul Baerman graduated from the US Military Academy in 1968 and was commissioned in Armor. He has served in armored and cavalry units in the United States and Vietnam and has commanded both tank companies and cavalry troops. A graduate of Armor Basic and Advanced Courses, Airborne and Ranger School and Command and General Staff College, he holds an MA in international relations from the University of Geneva, Switzerland. MAJ Baerman is presently assigned as an instructor with the department of history at West Point.

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MAJ Armstrong holds a BA in history from West Virginia University and an MA in international relations from Boston University. His military schooling includes the Infantry Officer Basic Course; Area Intelligence Officer Course; Vietnamese language training; MI Officer Advance Course, and Counterintelligence Course. His assignments have included Area Intelligence Officer, 4th Battalion, 525th MI Group, Vietnam; Assistant G2, Training, 1st Cavalry Division, Fort Hood, and, most recently, Commander, Special Security Detachment, Yongsan, Korea. MAJ Armstrong will attend the Command and General Staff College in August 1981.

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CPT Tom Adams holds a BA from Empire State College and an MA in international relations from Syracuse University. He is currently the threat officer for the US Army Intelligence School, Fort Devens. CPT Adams' military training includes the Infantry Officer Advanced Course, Ranger, Airborne and Special Forces courses; the Countersniper School, Tactical/Strategic Intelligence Course, Psychological Operations, Internal Defense and Development, Arctic Warfare and others. He is the author of several articles on terrorism, counterterrorism and special operations. His most current publication, dealing with Cuban influence in Africa, will appear in the *Conflict Journal*.

What Makes a "Good" Intelligence Summary?

by Michael G. Samet
and Ralph E. Geiselman

Introduction

For several years the Army has pursued the goal of automated battlefield information systems to support Command, Control and Intelligence (C²I) functions. Within the intelligence community, attention has recently focused on the Battlefield Exploitation and Target Acquisition (BETA) testbed and the All Source Analysis System (ASAS). ASAS will incorporate the best features of BETA and will become the focal point for tactical intelligence processing. The US Army Research Institute for the Behavioral and Social Sciences (ARI), a field operating activity of the Army Deputy Chief of Staff for Personnel (DCSPER), has conducted extensive research on the role of the human operator and user of automated systems, like ASAS, in order to develop systems whose operation will fulfill their design potential.

The research reported here was conducted under a project in support of the Tactical Operations System and more recently the SIGMA tactical executive system. The project addresses the problem of managing the flow of information in complex systems; the specific issue here was a means for condensing information as it passes from one staff element, or one echelon, to another. Additional details on these and related efforts may be obtained from Dr. Stanley M. Halpin, ARI, PERI-SF, 5001 Eisenhower Avenue, Alexandria, VA 22333, Autovon 284-8921.

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The technical capability of new computer-based tactical command and control systems may increase the density of information to the point where it overwhelms the users. For example, files on current enemy situations grow rapidly during critical periods of enemy attack and withdrawal. Condensing and organizing incoming information into manageable form will require summarization routines for these advanced

C²I systems. To that end, the Army Research Institute has been investigating just what makes a good intelligence summary.

In the future, tactical computer systems may be able to generate intelligence summaries. At present, guidelines for summaries by staff officers have emerged from recent analyses of the best tactical situation summaries, as rated by experienced officers.

Psychological research into the information summary problem sought to answer the following questions:

- What facts are covered by a good summary?
- Which facts are most important?
- In what order should the facts be mentioned?
- Should it include facts alone, or is interpretation valuable?
- Should the form of the summary change according to the tactical scenario, e.g., enemy-offensive or enemy-defensive?

Guidelines for good summaries were developed through an application of "schema" theory, from cognitive psychology, to the intelligence task. The theory holds that the comprehension of any information is affected by past knowledge, which is organized as a mental outline of an individual's general information on a topic. This "schema" or underlying logical structure provides the outline for organizing and interpreting new material. Since a set of schemata would exist for military data in the minds of highly-skilled officers, our officers are a resource for developing standardized aids for managing information.

A schema can be illustrated as a two-dimensional diagram of the elements and categories of information; in this case, the two dimensions are information "importance" and "order of presentation." Schemata are easy to derive, easy to interpret and can be applied to a variety of information-driven situations. Each schema can supply a framework to organize information or to generate specific guidelines for processing information. A set of such schemata could form an important part of either a manual or computer-based information manage-

ment system. The goal of this project was to apply psychological theories of human information processing to a particular task, summarizing information, in order to provide guidelines for improved performance.

What Makes a Good Summary?

Our initial investigation identified "good" summaries of a series of Enemy Situation Data (ESD) messages, and then analyzed the characteristics of these summaries to suggest summarization guidelines. A second experiment evaluated the usefulness of the guidelines.

In the first investigation, 16 Army staff officers (with a minimum rank of Major) at the Command and General Staff College at Fort Leavenworth, Kansas, examined 30 ESD messages in the context of a tactical scenario from a course on "Forward Deployed Force Operations." The messages described a border crossing and attack in the Fulda Gap area of Europe. Each message provided a precedence code (supplied by the intelligence source to indicate the urgency of the information), the message subject, the size and type of the enemy unit detected, the activity observed, the time of occurrence, the estimated location of the subject and the probable error of his estimate, the intelligence source and its reliability and free-text remarks supplied by the source (see Figure 1).

Each officer wrote a summary of the information in preparation for a three-minute briefing to the Corps G2. The 16 summaries were then rated by five experienced officers for content, accuracy, organization and overall quality. With Army ranks ranging from Major to Colonel, each rater had an average of more than 15 years of experience covering various combat speciality areas including tactics, intelligence and operations. All rating officers were familiar with the doctrinal procedures taught at the Command and General Staff College, the objectives of the research on summarization and the specific tactical scenario and message file employed.

The best summaries were identified by the average overall ratings. One of the summaries rated among the best is presented here:

There has been activity reported all along the border and units are engaging. The overall situation is still vague as to the exact location of the enemy's main and/or supporting attack. He has penetrated 1 KM past the border with mechanized infantry columns. The penetration was in the southern sector of the Corps zone at NB725005. A

ORIG/MSG NO: 15/7552 FILE: ESD ACTION: A FILE NAME: PREC: Z

SCTY: U RESTR: DISTR: UNIT: LOC: NB8700018

SUBJ: VEH LABEL: ECH: TYPE: :

SIG-EVENT?: EMPL: :

ACTV: MOVSW NATION: AE :

SPEED: 18 TGT?: :

DIR: 225 TGT-NO: :

ACTV-TIME: 210403AAUG79 ALT: :

QTY: LOC-ERR: 150 :

SOURCE: RECNGE/52 CH TO MGS: REF: TASK NO:

AGENCY: EVAL: B2

REMARKS: LARGE NUMBERS OF HEAVY VEHICLES ADVANCING ON ROADS THRU LOCATION NOTED, APPEAR TO REFLECT BN-SIZE FORCES.

Figure 1. SAMPLE ESD FORMATTED MESSAGE.

large number of vehicles are on the road at NB870018, possibly reinforcing the penetration. Several locations of division artillery groups and regimental artillery groups were noted in messages received and are located as follows (show on map). Some are not confirmed sightings.

Two units are in contact in the northern sector of the Corps zone. Both units are fighting motorized rifle battalions and one tank battalion respectively. We can make an assumption that the 1st echelon forces are crossing the border.

Elements are also crossing the border in the northern zone of the Corps sector at NB7245, indicating their efforts to attack at multiple locations for the most successful penetration, and to provide rapid advance once this success is made. Crossing elements at NB7245, 6644 and 7133 all along the border.

The essence of what makes a good summary was explored through two analyses of the summaries judged as best. In the first analysis, the basic elements of information used to form the two-dimensional schema were the 30 ESD messages (i.e., the two dimensions of the schema consisted of the percentage of the "good" summaries that mentioned each message and the general order in which the messages were discussed). In the second analysis, the basic elements of information were the general topics mentioned rather than the messages themselves. This second analysis allowed a personal interpretation of the intelligence data to be included in the schema, not just the "hard facts" in the messages.

Figure 2 shows the schema that emerged from the analysis of messages included in the good summaries. The higher the position of the message cluster, the more important that information was perceived to be. The farther to the left the message cluster, the ear-

lier it was mentioned. Cluster names were chosen from common subjects within numbered messages; the center of each cluster is indicated by a small cross. The dashed dividing lines between levels of importance were chosen subjectively to aid interpretation of the schema pictured in Figure 2.

Figure 2. A schema of the ESD messages based upon the "good" summaries for the enemy-offensive scenario. Clustering is by subject matter; the crosses designate

The good summaries had these characteristics: At the highest level of importance, (100 percent inclusion), they described only current engagements with the enemy. At the next level of importance (60 to 90 percent inclusion), they also included a discussion of unit movement across the border (non-engaged) and artillery positions behind the border (fire support). At a third level of importance (below 60 percent inclusion), they further included a description of unit movement behind the border (indicating possible reinforcements for engaged units); artillery positions near the border (indicating, in conjunction with unit movement on the border, possible points of major thrust); rocket installations (surface-to-air and FROG); instances of radio jamming, and intelligence data regarding the location of command posts.

As for the sequence of information presentation, the best ordering of the elements is indicated by the left-to-right relations among the clusters. For example, even though "artillery behind the border" is considered more impor-

cluster centroids. [Messages 3 (radar site), 14 (command post), and 30 (command post) were not included in any of the "good" summaries, and do not appear in this plot.]

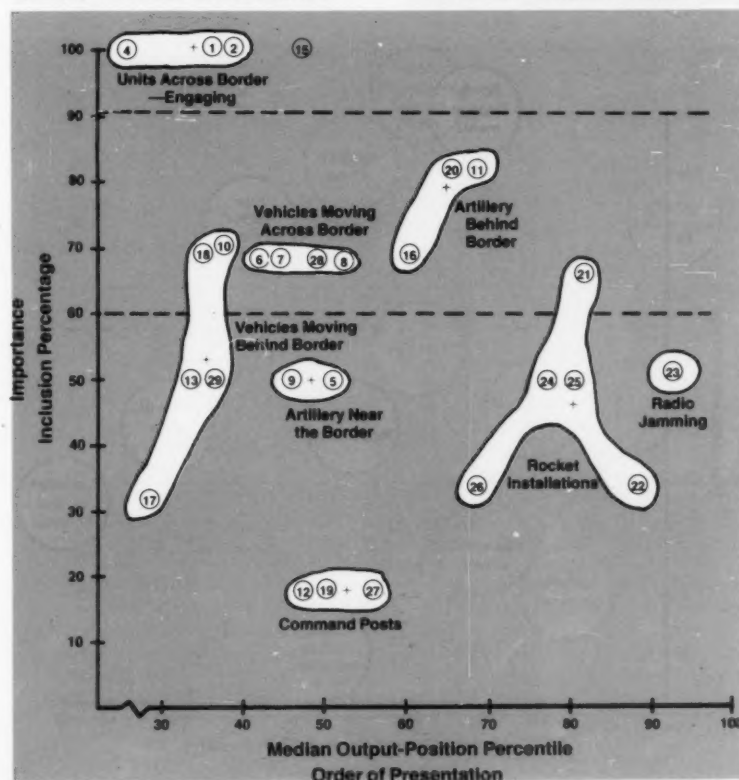


Figure 2.

tant than "vehicles moving behind the border," the latter information should be presented first if both topics are to be included in the summary. Thus, a schema, such as Figure 2, provides an outline for both deciding which elements to present, given the extent of detail desired (top-to-bottom cut off), and ordering the selected intelligence data in an appropriate sequence (left-to-right).

The second analysis derived a schema by topic only, and allowed for the staff officer's interpretation of the intelligence data to be included in the schema, not just the "hard facts" as specified in the messages. The topics were extracted from the summaries so that all components of all of the good summaries were represented in the list. Topic names were taken directly from the summaries.

Only five general topics were needed to describe all of the contents of the good summaries. These are plotted in Figure 3. The higher the vertical position of a topic in the plot, the more important it is considered.

As in the first analysis, discussions

of the "border engagements," "fire-support elements" and "unit movement" were pertinent, with 100 percent, 80 percent and 50 percent of the staff officers including some reference to these topics, respectively. This analysis also revealed that two major inferences were made in one-third to one-half of the good summaries in the form of concluding statements: one regarding the probable "point of main thrust," and another concerning the "location of the second echelon." In other words, experienced officers approved of summaries where some attempt was made to infer the intent of the enemy beyond the immediate situation.

Shifting now to the horizontal dimension of Figure 3, the further to the left the topic is, the earlier it should be discussed in the summary. According to the schema shown, a discussion of the "border engagements" should be presented first, followed by a description of "unit movement" and "fire support elements," and then the two inferences.

Two different levels of importance (top to bottom) are indicated in Figure 3 by a dashed line. These two levels, which were chosen subjectively, can be used to generate summaries of ESD information with two different levels of detail. Interpretation of these levels is

similar to that for the message clusters in Figure 2. At the most general level, the "good" summaries included only reference to border engagements with the enemy, followed by a discussion of fire-support elements. At the more detailed level, the good summaries further included an accounting of unit movement, placed before the discussion of fire-support elements, which was in turn followed by the two inferences.

The Guidelines and a Test

Based on the results discussed above, three guidelines were developed for preparing effective intelligence summaries: 1) they should be prepared in conversational style; 2) a well-founded interpretation of the information should be given if possible, not just "hard facts," and 3) a dynamic portrayal of the enemy situation should be offered to reflect the reality of the scenario; that is, information concerning enemy movement should be emphasized.

These guidelines seem reasonable and straightforward. Before suggesting implementation, however, we needed to determine if the guidelines actually helped Army personnel to produce better summaries.

The second investigation also extended the analysis to a different scenario of tactical messages, so that schemata for different types of tactical situations could be compared. Differences between situations would provide useful information for adapting information priorities and organizational structures to the needs of the tactical situation. Since the first investigation examined an enemy-offensive scenario, it seemed appropriate to examine a scenario for an enemy defensive situation in the second.

In this second investigation, 32 Army staff officers with a minimum rank of Major at the Command and General Staff College read a tactical scenario in which the enemy was in a defensive posture and examined 30 associated ESD messages. The messages were modifications of the 30 messages used previously so that the results of the two experiments could be compared. Several aspects of corresponding messages were preserved: 1) the subject matter (e.g., the type and size of unit); 2) the proximity of the reported activity to the FEBA, and 3) whether or not free-text remarks were included.

As in the first investigation, officers summarized the intelligence information for a three-minute briefing to the Corps G2. Sixteen officers used the three guidelines; the other 16 officers worked without guidelines. The 32

Figure 3. A schema of general topics included in the "good" summaries for the enemy-offensive scenario.

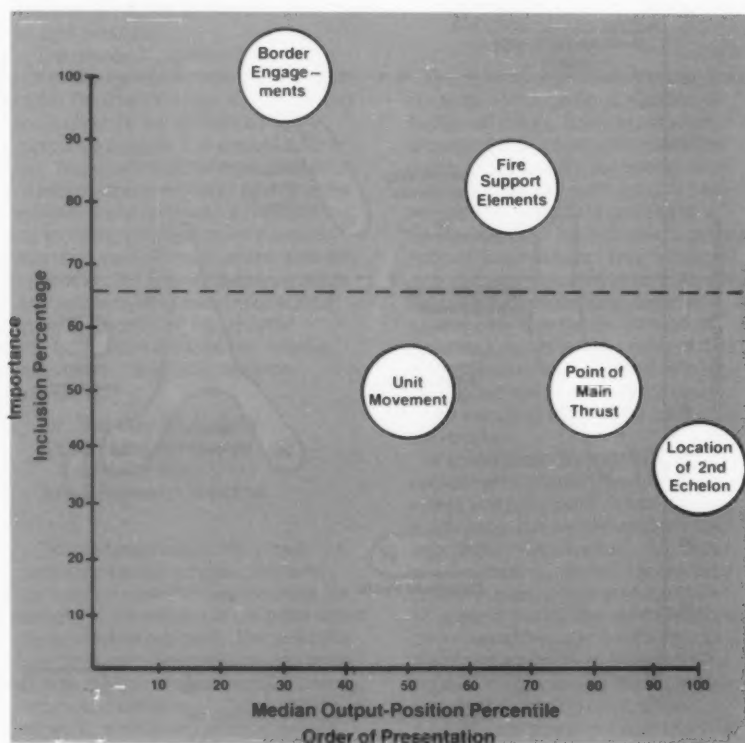


Figure 3.

summaries were rated on the basis of quality of content, interpretation, accuracy, organization and style by seven officers with 20 years of experience each. Each summary also received an overall quality evaluation. The raters did *not* know which summaries had been written with guidelines and which had not.

Guideline Effects

Analysis of the 32 summaries revealed the validity of all three guidelines. The experienced officers judged the summaries prepared with the guidelines to be significantly better on the overall evaluation rating and on all of the other ratings except accuracy. These results were obtained even though the guidelines were stated only in general form. Furthermore, the participants were not given any training in their use. The lack of significant difference on the accuracy dimension is understandable since none of the three guidelines concerned accuracy. Thus, the findings of the second experiment indicate the values of the three guidelines and the procedure used to generate them. They also illustrate the potential success of training programs and performance aids for improving the ability of staff officers to manage large intelligence data files.

An example of one of the 10 best summaries for the enemy-defensive scenario is presented below:

During the period 29 0400 to 29 0430 Aug 80, sporadic enemy activity occurred across the Corps front. The principal activity occurred in the center of the Corps sector. Several enemy armor battalions were engaged in the 201st sector and in the Northern part of the 54th sector.

Small enemy units were reported delaying in the North while Battalion size units were reported moving North and Northwest, indicating a possible movement of large elements out of the Corps sector toward the North. Further, there are several reports of large numbers of wheeled vehicle convoys moving eastward toward the enemy rear. This could mean either a relatively large re-supply effort in this sector, or the impending move to the North.

Of some concern is the report that an enemy tank battalion is moving west and into the South of the 54th mechanized division sector, perhaps from this 12th (NATO) corps area. This may indicate a limited attack along the Corps southern boundary though evidence of this is scarce.

Elements of division artillery groups

were located at NB3088, and NA350790. A "free rocket over ground" battery was located at NB190090. In all, Division Artillery has confirmed 31 enemy artillery positions, including 122 MRLs.

Three surface-to-air batteries (one in each sector) were located and one was found forward in the 54th Mech sector.

Based upon the above, indications are that the enemy will conduct limited attacks across the Corps front to defend/delay while withdrawing the bulk of his forces to reinforce the Northern area.

Ten general topics were needed to describe all of the contents of the good summaries of enemy-defensive activity. These are plotted in Figure 4 by importance and order.

As in Figures 2 and 3, the higher the vertical position of a topic, the more important. Three different levels of importance (top to bottom) are indicated in the figure by dashed lines, and these three levels indicate the topic inclusion guidelines for writing summaries with three different levels of detail.

Figure 4. A schema of general topics included in the "good" summaries for the enemy-defensive scenario.

In Figure 4, "unit movement toward the FEBA," "engagements" and an inference concerning "enemy intentions" appear to be the most important considerations: 100 percent, 90 percent, and 80 percent of the good summaries included some reference to these topics. "Command posts," "radio jamming," and the "location of the second defensive belt" were lowest in importance, with 30 percent, 20 percent, and 10 percent inclusion, respectively. The other four topics fell into the mid-importance range with inclusion percentages of either 50 percent or 60 percent.

Shifting now to the "order" dimension, the closer the topic to the left side of the figure, the earlier it should be discussed. In Figure 4, an assessment of "overall enemy strength" should be presented first, whereas an assessment of "enemy intentions" should be given last. "Unit movement toward the FEBA" and "artillery" are equivalent in order of discussion although enemy movement is considered to be a more important topic.

Effects of the Tactical Situation

A comparison of the summaries generated in the experiments allowed us

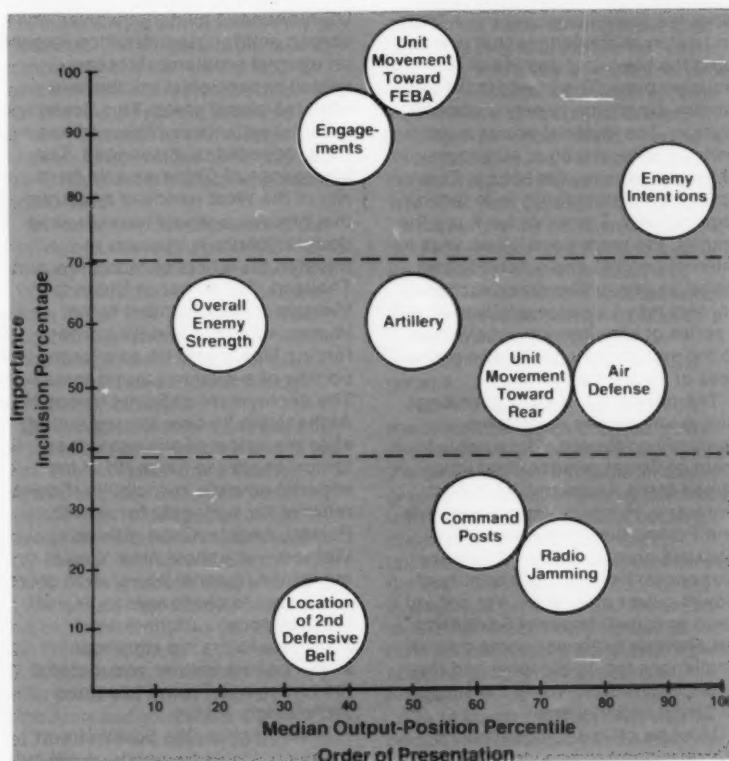


Figure 4.

to determine effects of the enemy's offensive or defensive posture on summarization. We wanted to know if the tactical situation changed the kind of summary required.

Comparing scenarios revealed that certain types of "hard facts" are likely to be included in the summary regardless of the enemy's posture. This is an important result since it suggests that experienced officers may keep in mind a hierarchy of information priorities that they apply to all tactical situations.

With both scenarios, information concerning nuclear weapons, engagements with the enemy, movement toward the FEBA and locations of regimental command posts were rated as being most important. Locations of enemy radar, jamming efforts, battalion command posts and movement away from or far behind the FEBA were rated as being least important in both scenarios.

Not all useful information, however, is contained in isolated "hard facts" or in

independent messages. The important process of interpretation of hard facts into overall assessments and inferences is definitely affected the nature of the scenario.

With the enemy-offensive scenario, inferences concerning the location of the probable point of main thrust and the location of the second echelon were prevalent in the summaries (see Figure 3). With the enemy-defensive scenario, other inferences were included, namely, a statement of the enemy's likely intentions (retreat, delay, attack, etc.) and an introductory summary statement concerning the overall strength of the enemy forces (see Figure 4). These latter statements did not appear in the summaries generated with the enemy-offensive scenario.

Given different tactical situations, different inferences appear necessary. Further studies of battlefield indications will be useful for the development of procedures to train analysts to produce summaries that take into account situa-

tional requirements.

Intelligence Communication Research

Psychological research on learning has shown that a good summary is worth more than an extended text for promoting the reader's comprehension and retention of the main points. These latest experiments supported by the Army Research Institute have helped to define what makes an effective summary of enemy activity. The guidelines emerging from the research have been tested and successfully demonstrated for their ability to help staff officers produce better summaries.

Future research will no doubt contribute more knowledge of the essentials of effective intelligence communication for both people and computers. The importance of the task warrants full knowledge of how the communication job is done when it is being done well.

Imperial Sovietism: An Analysis, Intelligence Digest: World Report, 1 May 1981, pages 5-8.

The Soviet empire, forged in the aftermath of World War II, today faces the same structural infirmities and external challenges that presaged the historical decline of previous empires. The power that fuels empire expansion depends upon an illusion. The imperial power must pretend to be strong at all geographical points simultaneously. This apparent invulnerability is in fact an impossibility. The more far-flung the empire, the more open it becomes to internal conflict and external challenge. In one or two areas such a conflict may be successfully met, yet a series of simultaneous challenges to the empire may hasten the process of its disintegration.

The power of the still-expanding Soviet empire has never been seriously contested. The establishment of Soviet rule required little armed force. Local revolts in East Germany, Hungary, Czechoslovakia and Poland during the past three decades prompted limited military responses. However, the totality of Soviet power after WWII has not yet been engaged. **Imperial Sovietism: An Analysis** examines some current challenges facing Moscow and their implications concerning the scope of Soviet imperialism.

Moscow claims to command a 'correlation of forces,' that, distinct from a balance of military power

with the West, tilts toward Soviet advantage. This correlation is largely based on Soviet perceptions of Western paralysis in the wake of Vietnam and Watergate, reinforced with a measure of detente. While the US renounced military involvement abroad and focused attention largely on internal problems, Moscow vented expansionist influence in selected global areas. This Soviet imperial expansion, however, has not proceeded unchallenged. The emergence of China as a *de facto* ally of the West removed a vacuum that otherwise would have allowed Soviet influence in Vietnam to threaten the whole of Indochina and Thailand. The threat of China to Vietnam is compounded by an immense Soviet-Chinese border, forcing Moscow to tie up a large portion of available ground forces. The deployment of Soviet troops in Afghanistan 'to save the revolution,' after the defeat of surrogate local forces, shattered the myth of the imperial power's invincibility. Soviet reliance on surrogate forces—in Poland, Angola, Cuba, Ethiopia, Vietnam—to uphold empire rule makes the imperial power even more vulnerable to challenges in any of these regions. Afghanistan continues to drain a significant amount of manpower and material resources and Poland becomes increasingly restive.

In summation, the Soviet Union today confronts tremendous difficulties in maintaining an empire whose

military and economic resources are seriously overextended. Furthermore, the aged Soviet leadership possesses an uncertain ability to remedy domestic shortages and a declining standard of living.

While recognizing that Moscow poses a considerable military threat to the West, this article effectively raises several major challenges to the imperial Soviet empire. The ways in which the USSR marshals its resources toward meeting these external and domestic threats will determine the nature and scope of Soviet world influence in the near future.

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Heir to Victory: The Combat Trail of the 1st Guards Tank Army

by H. William Beuttel

Opposite the NATO central region is the Group of Soviet Forces Germany (GSFG) consisting of twenty tank and motorized rifle divisions. The 1st Guards Tank Army presently comprises 25 percent of this maneuver strike force. It is a sizable force within GSFG and its strong tank inventory is a subject of interest to NATO planners in the CENTAG sector.

Although less well-known than other units in GSFG, such as the 8th Guards Army of Stalingrad fame and the 3d Shock Army which raised the red flag over the Reichstag in captured Berlin, the 1st Guards Tank Army's history presents a significant account of tank warfare and Soviet offensive doctrine as a decisive form of combat during the years of the Great Patriotic War.

Soviet tank armies were first formed in early 1942. It had been determined by STAVKA (Soviet High Command) that prior Red Army doctrine regarding the tank (then used primarily in an infantry support role) was inadequate. The changes to be implemented were expressed in a formal order in June 1942 from Fedorenko, Chief Marshal of Tank and Mechanized Troops which directed that the tank corps of the Red Army would be amalgamated into larger units which would be reserved for the execution of strategic and operational missions. "Piecemealing" a tank corps for infantry support was forbidden.¹ As a result of this order, two new units were formed near Stalingrad: the 1st and 4th Tank Armies.

The 1st Tank Army itself was formed from cannibalized elements of several armies but it traces its lineage primarily to the 38th Army and, before that, the 8th Mechanized Corps. The 8th Mechanized Corps, a pre-World War II unit of the Kiev Military District, was one of those unfortunate Soviet armor formations annihilated in the first few days of the war.² Its headquarters was used as a base for the establishment of the 38th Army out of militia units in July 1941.

The 38th Army participated in the battles for Kremenchuk (September 1941), Kharkov (January 1942) and Belgorod (April 1942).³ In June 1942, the armor assets of the 28th, 38th, and 51st Armies were consolidated to form the 1st Tank Army.

The 1st Tank Army was initially composed of the 13th and 28th Tank Corps, 158th Tank Brigade and 131st Rifle Division. For a short time, Major General K. S. Moskalenko, commander of the 38th Army, commanded the new tank force.⁴

The first test of the 1st Tank Army came on 26 July, 1942 when it was ordered to attack in conjunction with 4th Tank Army across the Don River to break through German lines and rescue the encircled Soviet 62nd Army at Kletskaya. The difficulty of the task was compounded by the fact that both armies were still in the process of formation and had only about 240 tanks apiece.⁵ The 1st Tank Army launched its attack as scheduled on 31 July but the 4th Tank Army's attack was delayed for two days.

1st Tank Army bore the brunt of German defensive measures for the first 48 hours as the Luftwaffe alone launched 1,000 sorties against it. Despite heroic efforts by the 13th Tank Corps (which fought its way across the steppe to the embattled 62nd Army), the 1st Tank Army was not able to break through with its main strength.

On 3 August, the Germans counter-attacked and smashed their way to the Don. The 1st Tank Army was again ordered to attack using tank corps that had only 15 tanks apiece. The attempt met with instant failure and, on 7 August, the German Sixth Army closed the ring around what was left of the 1st Tank and 62nd Armies near Ostrov. At the end of the day General Von Paulus reported: "... more than 57,000 prisoners, more than 1,000 tanks destroyed ... the Russian 62nd Army and great parts of the 1st Tank Army are destroyed ..."⁶

Within days Yeremenko, the Front commander, used what remained of 1st

Tank Army for spare parts. Its staff was assigned to bolster his own newly forming headquarters and its maneuver units transferred to the 4th Mechanized Group.⁷

The 1st Tank Army was formally reorganized in RVGK (strategic reserve) status on 28 January 1943 with a new organization which included the 6th (later 11th Guards) and 31st Tank Corps, 3rd (later 8th Guards) Mechanized Corps, 29th Anti-Tank Artillery Brigade and a self-propelled artillery brigade. The army also received a dynamic new commander who would lead it through the rest of the war: Lieutenant General (later Colonel General) Mikhail Yefremovitch Katukov.

Katukov was a prime example of the new Soviet officer coming to the fore. The early stages of the war had been fought by the hastily promoted survivors of the 1937 purges or political appointees with little or no combat or troop leading experience. Katukov had risen through military merit and combat experience against the Wehrmacht in 1941 and 1942. As a Colonel in the Battle of Moscow, Katukov had commanded the 4th Tank Brigade which was responsible for the destruction of dozens of German tanks. Combat success earned this unit redesignation as 1st Guards Tank Brigade and its commander the Order of Lenin and rank of major general.

Katukov afterwards participated in the difficult battles around Demyansk and commanded the 1st Tank Corps in the early stages of the battle for Stalingrad.⁸ With his assumption of command with 1st Tank Army, Katukov became one of only 11 general officers appointed to command a tank army during the war. "Only the most gifted, daring and resolute generals, who were ready to take full responsibility for their actions without a backward glance, were selected as commanders of tank armies."⁹

On 14 March 1943, Katukov was ordered to move his army to the Belgorod area as part of a counterattack reserve against the certain massive German

assault against the Kursk salient. By the night of 20–21 March, the army was in position south of Oboyan with an on order mission to man the second main defense belt in the southern part of the salient behind 6th Guards Army. Soviet and 1st Tank Army preparations for the coming battle were meticulous:

The night streets were loud with the noise of engines. Convoys of tanks and guns covered with dust were rumbling in the sector where we expected the German onslaught... We thickened our foremost line, moved further guns into position, once more coordinated and completed our firing tables and concerted our plans. We moved two artillery regiments into the strip held by 6th Guards Army. One armored brigade strengthened the order of battle of our infantry.¹⁰

Two hours after the German attack had commenced on 5 July, Katukov and Lieutenant General N. K. Popel, his political officer, arrived at the headquarters of the 6th Guards Army to find its commander having a nonchalant breakfast which he invited them to share. At that moment a German panzer corps broke through the Soviet lines. While enemy artillery peppered the area Katukov and his companion returned to their jeep and roared off to raise the alarm.

The 6th Guards Army was forced back steadily for the next two days and Front headquarters put out a desperate order: "On no account must the Germans break through to Oboyan." The 1st Tank Army was ordered to abort its counterattack mission and immediately occupy the second main defense belt. This was accomplished on 6 July after an all-night road march. The sector assigned was 30 kilometers wide and the army defended with the 6th Tank and 3d Mechanized Corps in its first echelon and 31st Tank Corps in the second. Two mechanized brigades were immediately engaged in fighting so fierce that "after two hours all that was left of them were their numbers."¹¹

On 7 July, the armored reconnaissance battalion of the Gross-Deutschland division encountered the 6th Tank Corps near the village of Verkhopenye and a meeting engagement ensued. The 6th Tank Corps attacked in wedge formation with 40 tanks leading. Six Soviet tanks were destroyed almost at once by the greater range of the German Tiger tanks' main guns but the 6th Tank Corps attacked time and time again until, after three hours and seven fruitless assaults, the 6th Tank Corps broke off the attack. Thirty-five burning

Russian tanks littered the battlefield.¹²

At the evening briefing Major General Shalin, Katukov's chief of staff, observed: "We are confronted by an unprecedented concentration of armor. It is the old tactic but this time the armor spearheads are led by Panthers, Tigers and Ferdinands. The cannon of our T34 cannot pierce the frontal armor of these fascist giants." Nikita Krushchev, then a political officer at Front headquarters, suddenly turned up at the meeting. "The next few days will be terrible," announced Krushchev, "Either we hold out or the Germans take Kursk. They are staking everything on this one end. For them it is a matter of life or death. We must see to it they break their necks."¹³

Shalin then made another point: the Luftwaffe was using aircraft in an anti-tank mode. These squadrons of JU-87 Stukas and Henschel 159s, armed with anti-tank cannon and led by Hans Ulrich Rudel the top German Stuka ace, had inflicted heavy losses on Soviet tank formations. Dropping from the sky on unsuspecting tank columns, they raked the Russian armor with murderous cannon fire. The 6th Tank Corps of Colonel Andrei Lavrentivitch Getman was particularly hard hit. Twelve of his T34s were knocked out by one plane alone.¹⁴

Katukov went to the 6th Tank Corps sector to assess their situation. Krushchev was still at 1st Tank Army headquarters when news of further disaster came: the 31st Tank Corps had been overrun. "If this report is true then nothing can prevent the Germans from striking across the Psel at the rear of 1st Tank Army," proclaimed Krushchev. He sent Lieutenant General Popel to the stricken unit while he issued threatening orders from headquarters to subordinates warning against retreat, cowardice and defeatism. Meanwhile Popel managed to rally a tank brigade of the 31st and soon other formations checked their flight thanks largely to the heroic efforts of the 29th Anti-Tank Artillery Brigade who had covered the withdrawal and allowed time for provisional defenses to be established.¹⁵

Katukov then had no choice but to employ what reserves he had left and call for reinforcements—all the time with Krushchev sitting opposite him ordering "Hold out, hold out, hold out!" For the next four days, 1st Tank Army fought a diehard defensive battle, the intensity of which can be judged from the amount of reinforcement received: four infantry divisions, two tank brigades, two tank regiments, two artillery brigades, one howitzer regiment and one self-propelled artillery regiment.¹⁶

The defensive measures of the army proved so effective that by 12 July 1st

Tank Army delivered a supporting attack with the limited objective of seizing the village of Yakolevo in conjunction with a larger meeting engagement fought by 5th Guards Tank Army at Prokhorovka further to the east. The tide began to turn against the Germans and by 23 July they pulled back to their original Belgorod defensive line. Pursuit operations could not be initiated due to severe shortages in 1st Tank Army (and sister units) fuel, ammunition and other stocks.¹⁷

Even while this was being accomplished, planning was underway to initiate the first general Soviet offensive of the war in order to seize the strategic initiative and wrest the city of Kharkov from the Germans. As early as 24 July, the Voronezh Front had received the warning order for the counteroffensive and the brief 10-day planning period put enormous strain upon the command and staff of the 1st Tank Army in particular who were exhausted after their intensive defensive efforts. Katukov's army was to strike in the direction of Akhtyrka to split the German forces from north to south and cut off all escape routes from Kharkov to the west and southwest. It was planned to commit the army along with 5th Guards Tank Army through the gap in the German lines to be created by the assault of the 5th and 6th Armies on the first day of the operation. At 1300 on 3 August both tank armies were committed on schedule. By the end of the day they had driven the enemy back some 25 kilometers and penetrated to the German third defense line.¹⁸

On 5 August, the great push for Kharkov itself began. German eyewitnesses reported that Russian tanks "flowed like lava" onto the broad plains around the city. But soon Katukov and other commanders were criticized by Stalin for attempting to advance in too wide a sector, thus dissipating their striking power. Nevertheless 1st Tank Army took Bogodukhov, its initial objective, on schedule. To speed the rate of advance, the Soviets tried a night attack on 8 August spearheaded by 1st and 5th Guards Tank Armies. The battle developed into a general melee in which German tanks rammed Soviet tanks and firing was conducted at point blank ranges. Tanks were so intermixed that the German anti-tank gunners could not distinguish friend from foe.¹⁹

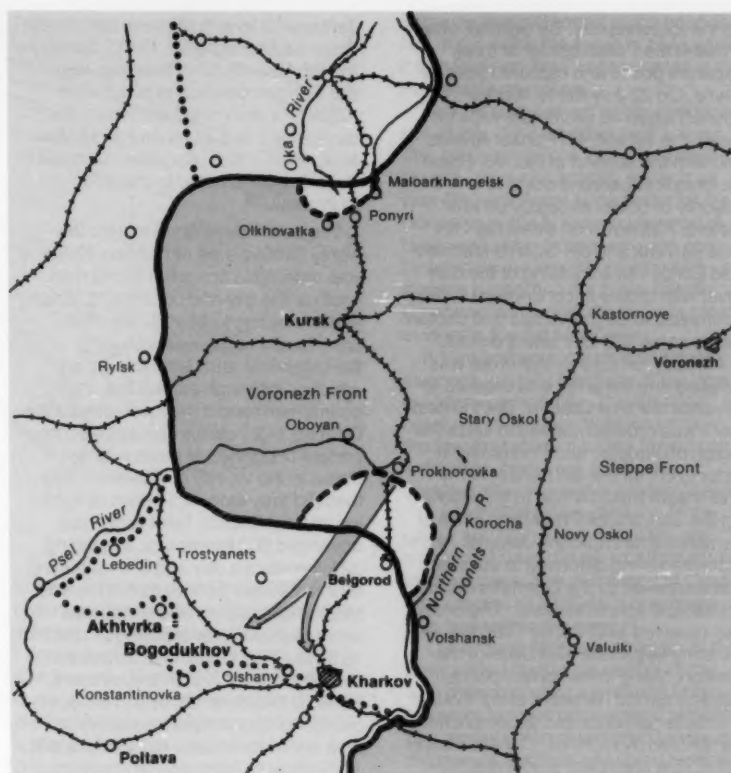
"Katukov's 1st Tank Army must cut the main communications in the Kovyagi-Valki area" directed STAVKA on 9 August but three days later the Germans began to launch powerful counterattacks with 11 divisions. Both tank armies were pushed back north. 1st Tank Army withdrew under heavy

pressure but still wore the enemy down by fighting on intermediate defensive positions: an operation still cited as a classic in Soviet military literature. Eventually the Germans succeeded in breaking into the rear of the army by striking at the weakly held flanks of its penetration wedge. This caused all hope of a Soviet encirclement of the enemy Kharkov grouping to evaporate. The Belgorod-Kharkov operation did demonstrate, however, the enormous striking power of the Soviet tank armies, a foretaste of what was to come. 1st Tank Army's average rate of advance in this operation was 20 kilometers a day.²⁰

The Soviet winter offensive of 1943-1944 found the 1st Guards Tank Army (the Guards title was awarded for Kursk and Kharkov) embarking on its role of offensive spearhead which it would retain through the rest of the war. On 24 December 1943, after a one-hour artillery barrage, the army initiated its portion of the offensive by delivering a main blow along the Zhitomir-Kiev highway. By noon its units had penetrated deeply into the German lines and liberated the town of Berdichev. Four days later, one of its tank battalions acting as a forward detachment burst into Kazatin where it destroyed hundreds of enemy supply vehicles.²¹

The German line soon firmed, however, and the army began a lateral shift to the south by 6 January 1944, probing for a weak point. It found one on 10 January when it broke through on the boundary between the 3rd and 36th Panzer Corps. Throwing a tank and mechanized corps into the exploitation, 1st Guards Tank Army raced to seize the vital town of Zhmerinka where a two track standard gauge railroad linked with Odessa to the south. The Germans fought frantically for the next two days to stem the Soviet advance and even surrounded the army southeast of Vinnytsa. The next morning, to their surprise, revealed that the entire tank army had slipped out of the encirclement during the night and, despite deep snow, it could not be determined precisely in which direction the Soviet tanks had escaped.²²

For two days and nights the Luftwaffe hunted for the tank army but neither photographs nor visual reconnaissance revealed its whereabouts. Finally, on the third day, a German armored force entered an area under suspicion and stumbled across the entire 1st Guards Tank Army hidden in several villages in barns and under haystacks. The Germans struck immediately with the 46th Panzer Corps and 1st SS Panzer Division. On 24 January, the tank army was forced to retreat and set up defenses



Map #1 The Battle of Kursk.

behind a small river where a fierce battle raged for the next three days. By 28 January, the Soviets were on the run for their own lines after a terrible beating: 701 tanks and assault guns destroyed, 8,000 dead and 5,436 captured.²³

Despite its appalling losses, Katukov's army was battle-ready again within a month. The 1944 spring offensive of the 1st Ukrainian Front opened on 4 March with both 1st Guards Tank and 4th Tank Armies in a second echelon role. Committed to action on 21 March, both tank armies developed the attack between the cities of Ternopol in the west and Proskurov in the east. Two hundred Soviet tanks rammed their way through the German lines, moving due south between the Seret and Zbruch rivers. The 1st Guards Tank Army secured its flank by sending a flying column to attack the German 68th Infantry Division at Ternopol driving the enemy back 16 kilometers in one day. By 29 March, the bulk of the army had crossed the Dnester and taken the city of Chernovtsy completing the encirclement of the German 1st Panzer Army. Katukov's 8th Guards Mechanized Corps sent a forward detachment to seize crossings on the Prut river making the 1st Guards Tank Army one of the

first Soviet units to reach the pre-war Soviet state boundary.²⁴

At this juncture, German intelligence broke the operations codes of both tank armies, thereby learning movements, daily objectives and strengths of each unit. From this information the 1st Panzer Army decided to break out through 4th Tank Army's sector where the infantry had not caught up with the armor. Front headquarters immediately ordered 1st Guards Tank Army to turn about and move north to assist her sister unit in stopping the breakout but road conditions were so bad due to intense rainfall that Katukov could not get enough forces north of the Dnester in time to do any good.²⁵

During the Soviet summer offensive, 1st Guards Tank Army formed part of a strike group along with 13th and 3rd Guards Armies whose mission was to capture Rava Russkaya. Formally committed to battle on 16 July, it struck the 4th Panzer Army's flank and forced it to move its entire front back to the Bug River in less than two days. From 17-20 July, the army began its entry into Poland. On the 18th it ran the boundary between 1st and 4th Panzer Armies, crushed German resistance at Rava Russkaya and crossed the Bug

on the following day. By nightfall it had crossed the Polish border at three separate points and captured several towns. On 22 July the tank army opened a gap 48 kilometers wide between the 1st and 4th Panzer Armies and with the support of Red Air Force Sturmovik squadrons outran the majority of Soviet forces by 60 kilometers. Katukov then threw his 11th Guards Tank and 8th Guards Mechanized Corps into a crossing of the San River with orders to continue on to the northwest, force the Vistula and capture Kielce some 120 kilometers distant.²⁶

Abruptly, on 23 July this order was revoked and the army was ordered to advance towards Cracow. But the next day it was ordered instead to seize the region of Jaroslav and Prezemsyl in order to cut off the 4th Panzer Army. This meant Katukov had to finish forcing the San, attack Prezemsyl while at the same time capturing Jaroslav, then organize strong defenses to the east and southeast so the Germans could not escape across the river. The order was received at 0700. By 1400 the entire army began the execution of the mission. Using three control points, Katukov turned his entire army around in a matter of hours and accomplished the mission by nightfall. The 4th Panzer Army, now encircled, fought desperately to get through but only 5,000 out of 30,000 men made their way through the tank army's defenses.²⁷

By 27 July, 1st Guards Tank Army was in pursuit of the broken German forces and captured crossings on the Vistula two days later. The crossing was begun without delay at Baranov. On 1 August the majority of the army was across and the guardsmen extended their bridgehead to a depth of 15 kilometers. On 5 August in conjunction with three other armies, 1st Guards Tank Army mounted an offensive. Five days of fighting inflicted a heavy defeat on the reformed 4th Panzer Army and gained another 10 kilometers of bridgehead. The Germans struck back, to split the salient, on 10 August primarily against 1st Guards Tank Army's right flank in the Opatow area. Generous allocations of Front anti-tank artillery units defeated this attempt and Katukov renewed offensive operations on 14 August. By 17 August the tank army encircled two German divisions northwest of Sandomierz, liberating the town itself the following day.²⁸

In the fall of 1944 1st Guards Tank Army was transferred from the 1st Ukrainian to the 1st Belorussian Front for the Vistula-Oder campaign. Its mission was to strike in the direction of Radom and then south of Warsaw itself. The operation did not commence until 12

January 1945 with the tank army in the Front second echelon. On 15 January the 8th Guards Army broke through the German defense at which time Katukov's army was committed. Two days later it had advanced 30 kilometers, taken 1,500 prisoners, captured Lodz and penetrated to the west of Warsaw.²⁹

The attack developed toward the highly fortified area of Poznan. Katukov was ordered to cross the Warta river south of the city and continue to attack west. Avoiding fortified locales the army fought to the west reaching the Oder river and Germany on 31 January. Although exhausted, the guardsmen fought their way across the Oder on 1-2 February and gained important bridgeheads on its western banks in the vicinity of Kuerstin. Only then did they stop. In 17 days of fighting, the 1st Guards Tank Army had advanced 600 kilometers, averaging 32 kilometers a day and once attaining 80 in a 24-hour period. Its 8th Guards Mechanized Corps had conducted twenty assault river crossings in the last 15 days. "The tanks have traveled in a straight line perhaps 570 kilometers," Katukov told Getman, one of his commanders, "But Andrei Lavrentivitch their odometers show more than 2,000. A man has no odometer and nobody knows what wear and tear has taken place there."³⁰

Although the stage was set for the final drive to take Berlin, on 6 February Stalin had ordered Zhukov to halt operations and detach forces to destroy the powerful German grouping in Pomerania. Its position posed a dangerous threat to further Soviet advance westwards. Accordingly, throughout February plans were made to eliminate Army Group Pomerania from the German order of battle, in conjunction with Rokossovsky's 2nd Belorussian Front. On 1 March, 1st Guards Tank Army led the attack from Stargard against the 2nd and 3rd Panzer Armies in the Danzig area. Smashing through 3rd Panzer Army, in the process surrounding and destroying the 10th SS Corps, the tank army enveloped the coastal city of Kolberg on 5 March. It then began a push towards the Bay of Danzig. In a week the army had crushed the rear areas of both German armies and captured Puck on the Baltic.³¹

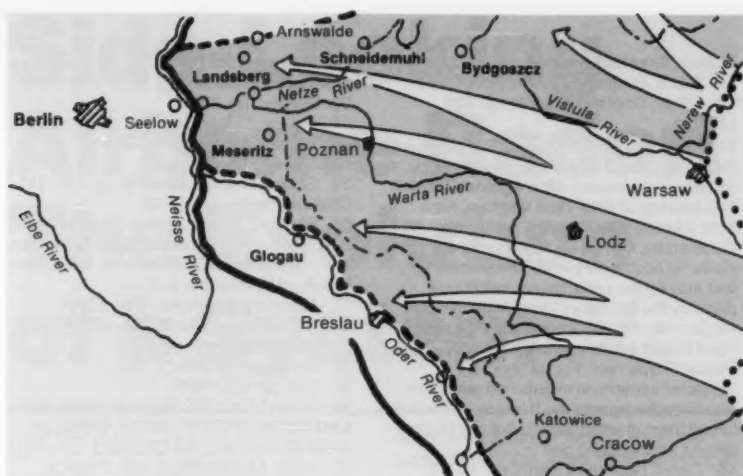
Its role in the rout of Army Group Pomerania complete, 1st Guards Tank Army returned to the Kuerstin area in mid-March to participate in the last great Soviet offensive against Berlin. Its mission was to support the 8th Guards Army by striking south of the city once the breakthrough was completed. In the

early morning hours of 16 April 1945 the 1st Belorussian Front attacked using hundreds of spotlights and searchlights to blind and terrify the German defenders. So secretive was the spotlight plan that even Katukov, an army commander, was taken by surprise. "Where the hell did we get all those spotlights?" he asked Front headquarters. "The devil only knows but they must have stripped the entire Moscow anti-aircraft defense zone" was the reply.³²

The searchlight plan proved a failure and many later claimed all it did was illuminate targets for German gunners. After nine hours the 1st Belorussian Front had advanced only six and a half kilometers. Zhukov determined that 1st Guards Tank Army would be committed to break the deadlock. He gave the order personally to Katukov at Front headquarters. As the marshal was leaving and everyone was respectfully stepping aside to let him pass, he suddenly turned to Katukov and snapped: "Well, get moving!" Katukov was delighted because now his army would be in the fighting for the city proper. He even had visions of 1st Guards Tank Army capturing Himmler and Ribbentrop at their offices.³³

At five a.m. on 17 April, Katukov's tank army stormed the high ground around Seelow after Red Air Force heavy bombers had pounded the area. The German troops who had defended the heights so valiantly the day before fled, terrified, at the sight of the massed tanks covered with infantry riding their hulls. But resistance grew stiffer and by the end of the second day the Berlin offensive was still mired in the Oder swamps. When the evening reports came in Katukov slammed down his field phone and kicked the door of his headquarters. The 45th Guards Tank Brigade of the 11th Guards Tank Corps had just reported "We are stuck on our noses." "Those Hitlerite devils," shouted Katukov, "I have never seen such resistance in the course of the war." Then he announced he was going forward himself to find out "what the hell is holding things up." That night Stalin called Zhukov and castigated him for his error in committing a tank army to a sector where the German defenses were too strong, overlooking the fact that he had originally approved the plan.³⁴

At Seelow, the fight had caused mass confusion. Troops and tanks were crammed everywhere into any available corner, garden or street. The traffic jams were so great that General Chuikov of the 8th Guards Army remarked irritably that the mass of stalled 1st Guards Tank Army vehicles hindered the movement of even his foot-



Map #2 The Drive toward Berlin.

sore infantry. The bitterness of the close street fighting led the Soviet tankers to devise an ingenious solution to counter the deadly German Panzerfaust. They looted every bedspring they could find in German homes and hitched these coiled wire contraptions to the front, top and sides of their tanks to break the impact of the blunt nosed anti-tank rockets.³⁵

On 18 April 1st Guards Tank Army narrowed its attack zone and broke through the German line southwest of Seelow and the next day reached Munchenburg, only 32 kilometers from Berlin. On 20 April they took Furstenwald. The outer defense ring of Berlin proper was reached the next day but the offensive slowed again against the fierce resistance of the German 56th Panzer Corps. The next four days saw 1st Guards Tank Army decisively crushing the panzer forces in its path. At last at dusk on 26 April 1945, Katukov's armored columns with tank riding infantry rolled across Tempelhof airfield into Berlin.³⁶

During the actual street fighting in Berlin Katukov wisely task organized with 8th Guards Army attaching one of his tank brigades to each of their infantry divisions. He thus avoided the terribly high tank losses experienced by other armor commanders during the battle. By 30 April 1st Guards Tank Army and 8th Guards Army were storming the Tiergarten area of Berlin. Advanced units of both armies were in the street next to the Fuehrerbunker when Hitler shot himself. Upon cessation of hostilities on 2 May the entire 1st Guards Tank Army lined up in parade order on the Tiergarten railway viaduct to receive the surrender of the shattered German

forces. This they did with open camaraderie by leaping from their tanks and offering cigarettes while shouting "Vonya kaput" (the war is over). Here Katukov saw General Weidling, the commandant of Berlin and a commander he had personally opposed in battle several times, walking in a column of prisoners, causing Katukov to reflect on the contrasting fortunes of the war.³⁷

The 1st Guards Tank Army ended the war in a blaze of combat glory and had the distinction of being one of the six armies chosen to occupy the Soviet zone of Germany. The army and its subordinate corps had been awarded every major Soviet decoration including the Order of Lenin, Order of the Red Banner and the Orders of Suvorov, Kutusov and Bogdan Khmelnitsky in several classes. Katukov himself received many decorations and was twice awarded the title Hero of the Soviet Union. After the war he was the Head of Soviet Military Administration and Chief of Armored and Mechanized Troops for Group of Soviet Forces Germany.

Writing in 1970 General of the Army Shtemenko described him as "the senior tank general alive today. He is a real soldier and a great expert on the combat training and tactics of armored forces." Katukov was still living as of 1975.³⁸

Conclusion

The tactics of 1st Guards Tank Army demonstrated definite patterns which today remain part of tank army doctrine. The first of these was the tendency to run boundaries. In 1944 at Kiev and later in the Lvov-Sandomierz operation, the army achieved its break-

throughs along German corps boundaries. It did much the same in 1945 when it split 2nd and 3rd Panzer Armies in the Pomerania operation.

Second was a much better appreciation of infantry than other tank armies. The 1st Guards Tank Army was never caught without its infantry support as was 4th Tank Army in the battle for the Denester in 1944. Katukov favored attacks on narrow frontages using combined arms teams with infantry and engineers supporting the tanks directly. Combined arms operations were most evident in the fight for Berlin.

A third trait was initiative and decisiveness, usually functions of the commander's personality. The Vinnitsa breakout in January 1944 was one of the few examples of a lone Soviet unit extricating itself from a difficult and complex situation without external aid.

A fourth trait was dedication to the cause and high esprit within the unit which contributed in no small measure to its success. The proportion of Communists and KOMSOMOL members was high within the army.³⁹

The organization and strength of the army varied during the course of the war, demonstrating a constant tailoring of assets to meet tactical requirements. The organization of armored forces at regimental, brigade and corps level was frequently revised during the war years to cope with changing environments. Tank armies varied greatly in tank strength. They might have anywhere from 400 to 1,000 tanks depending on mission requirements. The 1st Guards Tank Army itself fluctuated greatly from an initial strength of 240 in 1942 to a high of around 1,000 in 1944 to a figure of 542 in the Berlin operation.⁴⁰

Today, the 1st Guards Tank Army remains a vital component of forward deployed Soviet forces in East Germany albeit with a much-changed strength and organization.

The 1st Guards Tank Army continues to maintain its high traditions of combat readiness and its role of vanguard of Soviet tank troops. Although untried in combat for more than 30 years, it has performed critical missions in peacetime to maintain Soviet strength and influence in East Europe. It crushed the East German uprisings in Dresden in 1953 and participated in the Czechoslovakian invasion of 1968.

The history of the 1st Guards Tank Army is a practical demonstration of the Soviet belief in the offensive as the decisive form of combat. On any future battlefield it can be expected to uphold this conviction again and preserve its record of combat glory. If so, the 1st Guards Tank Army will remain a true heir to victory.

Footnotes

1. DA Pam 20-269, pp. 106-109.
2. Erickson, *Road to Stalingrad*, pp. 163-166. See also N. K. Popel, "Barbarossa: The Shock," *History of the Second World War*, NP: Marshal Cavendish Ltd, 1973, pp. 590ff.
3. Ibid, pp. 203, 205-210, 303, 344-347.
4. Zhukov, *Greatest Battles*, pp. 126-127. Erickson, *Road to Stalingrad*, pp. 365-368.
5. Zhukov, *Greatest Battles*, loc. cit. Erickson, *Road to Stalingrad*, loc. cit.
6. Erickson, *Road to Stalingrad*, loc. cit. Kerr, *Secret of Stalingrad*, p. 93. Craig, *Enemy at the Gates*, pp. 37ff.
7. Erickson, *Road to Stalingrad*, p. 368, 430.
8. Shtemenko, *Soviet General Staff*, pp. 10, 101-102. Zhukov, *Greatest Battles*, p. 56. Carell, *Scorched Earth*, p. 26. Birykov, *Anti Tank Warfare*, p. 125. Katukov (b. 1900) fought as a volunteer in the Red Army during the civil war (1919) and attended the graduated school for commanders in 1922. In 1935 completed advanced officers training course at the Red Army Military Academy for Motorized and Mechanized Forces. At some time he was in charge of an infantry school. A member of the communist party since 1932, he commanded a tank brigade in 1938 and took part in the march into the western Ukraine (1939) and Rukovina (1940).
9. Shtemenko, *Soviet General Staff*, p. 395.
10. Carell, *Scorched Earth*, p. 29. Caidin, *Tigers*, pp. 14ff. Parotkin, *Kursk*, p. 180.

- Zhukov, *Greatest Battles*, pp. 206ff.
11. Carell, *Scorched Earth*, pp. 61, 68.
12. Carell, *Scorched Earth*, pp. 68ff.
13. Ibid.
14. Ibid. See also Hans Ulrich Rudel, *Stuka Pilot*, (New York: Bantam Books, 1958, pp. 98ff and John Weeks, *Men Against Tanks: The History of Anti-Tank Warfare*, New York: Manson Charters, 1975, pp. 71ff. Rudel states that on his first combat flight at Kursk he destroyed twelve tanks which very well may be the same twelve lost to one plane by the 6th Tank Corps. Also on 8 July the German 4th Air Group repelled a brigade sized Soviet attack against the 1st SS Panzer Corps' rear. For an hour four Henschel squadrons maintained squadron sized attacks against the Russian armor and forced them to withdraw without any German ground troops taking part.
15. Carell, *Scorched Earth*, pp. 74-77.
16. Ibid. Parotkin, *Kursk*, pp. 102ff.
17. Parotkin, *Kursk*, pp. 51, 54, 103.
18. Ibid. pp. 28, 105, 108. Zhukov, *Greatest Battles*, pp. 249-251.
19. DA Pam 20-230, pp. 55ff. Shtemenko, *Soviet General Staff*, pp. 180ff.
20. Parotkin, *Kursk*, pp. 135, 183-185. Shtemenko, *Soviet General Staff*, pp. 180ff.
21. DA Pam 20-233, pp. 60-62.
22. DA Pam 20-230, pp. 88ff.
23. Ziemke, *Stalingrad to Berlin*, pp. 218ff.
24. Ibid. pp. 279ff. Carell, *Scorched Earth*, p. 437. Sidorenko, *Offensive*, p. 192.
25. DA Pam 20-234, pp. 43-51. Carell, *Scorched Earth*, pp. 444ff.
26. Konev, *March of Liberation*, pp.

- 29-34. *Soviet Air Force*, p. 292. Ziemke, *Stalingrad to Berlin*, pp. 341ff. Shtemenko, *Six Months*, pp. 68ff.
27. Shutov, "Troop Control," pp. 57-58.
28. Konev, *March of Liberation*, pp. 28-34.
29. Shtemenko, *Six Months*, pp. 88ff, 111. Chuikov, *Berlin*, pp. 81-88.
30. Chuikov, *Berlin*, pp. 94-97. Ryan, *Last Battle*, pp. 193ff. Zhukov, *Greatest Battles*, p. 271. Sidorenko, *Offensive*, p. 186. Konev, *March of Liberation*, p. 258.
31. Salisbury, *Unknown War*, p. 191.
32. Ziemke, *Battle for Berlin*, pp. 46ff. Konev, *March of Liberation*, p. 57.
32. Ryan, *Last Battle*, p. 348.
33. Ibid, pp. 302, 361ff.
34. Toland, *Last 100 Days*, pp. 449ff. Ryan, *Last Battle*, pp. 367ff. Seaton, *Stalin*, pp. 249ff.
35. Ryan, *Last Battle*, p. 391. Chuikov, *Berlin*, p. 156.
36. Ziemke, *Battle for Berlin*, pp. 81-94. Ryan, *Last Battle*, p. 428.
37. Chuikov, *Berlin*, p. 183. Anon., "Moscow to Berlin," pp. 23ff. Toland, *Last 100 Days*, p. 617.
38. Shtemenko, *Soviet General Staff*, p. 395. In 1951 Katukov attended courses at the General Staff Academy and in 1955 was elected a deputy of the Belorussian Supreme Soviet. At the same time he assumed an executive post in the Ministry of Defense of the USSR. In 1959 he was promoted to the rank of Marshal of Armored Troops.
39. Konev, *March of Liberation*, p. 251.
40. Seaton, *Stalin*, pp. 275-277.

Strategic Implications of the All-Volunteer Force: The Conventional Defense of Central Europe, by Kenneth J. Coffey, University of North Carolina Press, Chapel Hill, 1979, 210 pages, \$15 (hardback), also available in paperback.

The first half of *Strategic Implications of the All-Volunteer Force: The Conventional Defense of Central Europe* reviews the history of the All-Volunteer Force (AVF). Coffey emphasizes that the adoption of the AVF in 1973 was a "clear departure from previous US military policy and strategic capabilities." Most prominently and, in Coffey's opinion, most ominously, the Army's ability to defend Central Europe has been dramatically undermined. This theme is developed in the second part of the book. Policy alternatives to restore strategic capabilities conclude the analysis.

A historical methodology is used to investigate the social and political milieu and processes in which conscription in the US was first questioned, then changed and finally

abandoned. The relative importance of conscientious objection, draft-dodging, draft evasion and anti-draft/anti-war activities is assessed as these events led to commissions, piecemeal reforms and eventually the AVF. This is followed by a litany of the well-publicized problems of force composition and recruiting shortfalls which are increasingly experienced by the AVF: studies on the imbalances in terms of sex, race, income level and education/quality are discussed.

Mobilization becomes a crucial consideration because of the Army's reliance on the National Guard and Reserve in the event of war. It is here that the link between the shortcomings of the AVF and potential disasters in the defense of Europe is forged.

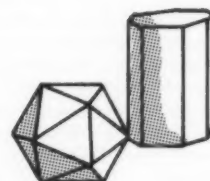
Coffey judges the Army's ability to fulfill its primary mission, "to meet the requirements for the 'worst case' scenario of a conventional war between NATO and the Warsaw Pact forces, 'as inadequate.'"

Major policy options outlined include higher funding for AVF manpower, resurrection of the Selective Service, Universal Military

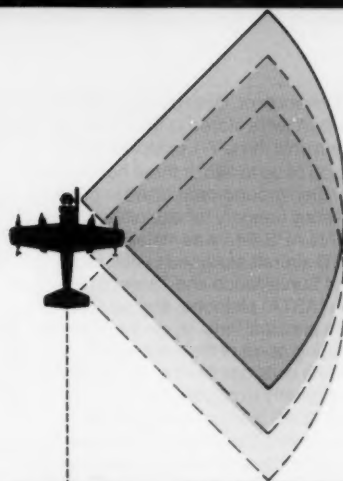
Training and Universal Service. The most important factor in the adoption of any of these proposals will be the political will of the country.

Concluding his study, Coffey suggests three policy changes (including a draft for the Individual Ready Reserve) to reduce AVF manpower problems, adjustments in mobilization and deployment policies, and a more realistic and credible reconciliation of strategic capabilities with commitments. The author has managed to present a much-researched policy issue and, by taking the new perspective of implication for European defense, has completed a useful study which seems to make the AVF less viable still.

2LT Gordon Drake



Side-Looking Airborne Radar: The Evolution of a System



by LTC Ballard M. Barker and
CW2 Rex A. Williams

Since the early 1960s one of the commander's best battlefield eyes has been the OV-1 (Mohawk) mounted side-looking airborne radar surveillance system, or SLAR. Originally fielded in 1960 as the AN/UPD-2, including the AN/APS-94 radar subsystem, Army SLAR has been used extensively in a wide variety of combat and peacetime military missions worldwide. It has also achieved notable results in several civil applications such as environmental assessments for the US Army Corps of Engineers and, more recently, in providing spectacular and uniquely useful imagery of the volcanic activity of Mount St. Helens, WA.

Soldiers who served with Mohawk

units or as image interpreters in the early days of the Army SLAR's service would see only superficial similarities between the hardware and imagery of the early versions and that produced today. That SLAR has served so long and so well in such varied assignments is attributable in large part to the actions of combat developers at the US Army Intelligence Center and School (USAICS) in anticipating and generating evolutionary Product Improvement Programs (PIPs) to existing systems in response to changing user needs, technologies and threats.

A discussion of what SLAR does, who it serves and its metamorphosis from 1960 to presently evolving concepts will illustrate both the direction of current SLAR materiel developments and the functioning of the combat development system.

Ignoring the obvious aspects of its

name for the moment, side-looking airborne radar is essentially a fixed-beam radar with an antenna mounted parallel to the longitudinal axis of an aircraft. As the aircraft proceeds along its flight path, the radar transmits a very narrow beam of electromagnetic energy at a relatively low angle towards the earth's surface in a direction perpendicular to the flight path. The energy is transmitted in pulses which strike objects, or "targets," on the earth's surface. Much of that energy is reflected back to the airborne antenna and receiver where it is processed into a visual image. The amount of energy reflected to the antenna is dependent on several variables, the most important of which are the size, composition and incident angles of the targets. The basic product of such a radar scan of an area is a small scale, rather coarse-grained, radar map of the terrain having superficial similarities to a photograph.

By electronically processing the reflected pulses, the radar is also able to detect, and image as dot-like blips, any moving objects of sufficient size and velocity in the line-of-sight. It is the use of those moving target indicators (MTI) which is of greatest value to the tactical commander. By its physical nature, these radar signals effectively see targets in all light, and virtually all weather conditions; and provide tactical commanders with a singular capability to constantly surveil the movement of forces or targets within radar range in any area of interest.

The AN/APS-94 SLAR engineering development models were first used by the Army in 1960, to be followed in 1962 by the first true "production" models (incorporating minor changes) which were designated AN/APS-94A. It was a traditional vacuum tube radar of high weight and volume and limited range

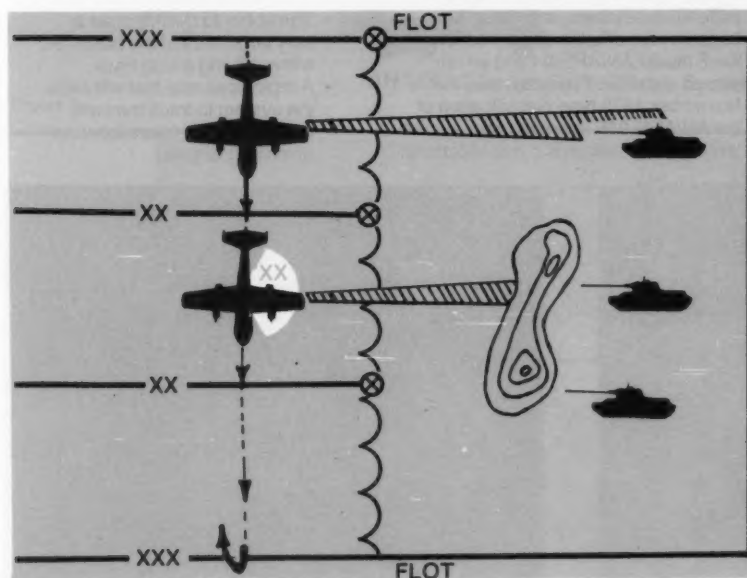


Figure 1.

Figure 1. Conventional SLAR can "see" enemy tanks which are not masked by terrain.

of 90 kilometers. Data from the AN/APS-94A were stored in the airborne system until the OV-1 completed its mission of up to two or three hours, and were then ground-processed to produce hard copy imagery for exploitation. The AN/APS-94A was installed in OV-1B aircraft assigned to divisional Aerial Surveillance and Target Acquisition (ASTA) platoons, and served as the principal long-range intelligence gathering asset of the Army division.

As the divisions having ASTA platoons greatly expanded the areas over which SLAR was used, the necessity for improving the range and timeliness of data processing became apparent. Combat developers consequently took those user needs, expressed them as Army requirements, and worked closely with civilian industry to explore technologies to alleviate existing shortcomings. The result was the 1964 fielding of the AN/APS-94B with an image processing and in-flight viewing system, the RO-166, built into the aircraft cockpit. It not only saved time by processing the imagery while the mission was in progress, but allowed the system operator (TO) to make in-flight spot reports as necessary. Associated with the AN/APS-94B was the first ultra high frequency (UHF) data link for near-real time transmission of SLAR to the ground terminal. The complete system of SLAR, data link and ground station was designated AN/UPD-2.

Several improvements in image processing technologies and radar electronics were recognized and incorporated into the SLAR between 1964

and 1979 in PIPs resulting in the AN/APS-94C, D, and E versions. The AN/APS-94D product improved system included new solid state electronics to increase reliability and decrease weight and power requirements, while achieving an increase in range from 90 to 100 kilometers. It also included a new RO-352 cockpit image processor-viewer. A major civilian innovation that allowed dry processing of photographic film on which SLAR data is recorded eliminated the need for dated and cumbersome wet chemical processing. The dry-silver system was incorporated as the RO-495 in 1979, and changed the SLAR designation to AN/APS-94E.

The AN/APS-94E equipped AN/UPD-2 system was a major improvement over older systems and was very successfully employed on a range of worldwide missions, but during the period of its use, other desired changes became apparent. The rapidly intensifying air defense threat indicated a need to increase the SLAR's range so that surveillance aircraft could effectively operate at greater standoff distances from the forward line of troops (FLOT). At the same time, the electronic countermeasures (ECM) threat to the system was intensifying and threatening the electronic effectiveness of the SLAR.

Largely in response to the changing ECM and air defense threats, the corps commander's need to see moving targets much deeper on the battlefield, and requests from units in Europe and Korea, combat developers at USAICS, materiel developers, and industry began a joint effort to quickly develop the F model AN/APS-94 and an improved data link. The result was the November 1979 type-classification of the AN/APS-94F airborne radar surveillance system, which is a new electronic

counter-countermeasures (ECCM) hardened radar with an extended range capability. Together with an improved AN/ARC-164 digital data link and a new ground sensor terminal, the entire system is designated the AN/UPD-7. Initial feeding of the AN/UPD-7 will begin late in 1981.

The AN/UPD-7 system has been designed for ease of operation and maintenance, and will be fielded with a comprehensive logistics support package. Concerns for minimizing using unit problems in accommodating the product improved system during transition to the AN/UPD-7 and the entire life cycle were continually addressed during the development cycle. As a consequence, the system requires no changes in personnel numbers or skill levels in aerial surveillance units, and should facilitate the transition of current system operators and maintainers to the AN/UPD-7.

With an eye to the future and a full appreciation of the rapidity of change in user needs, technology and the threat, combat developers at USAICS have already initiated development of the next generation SLAR system. Although similar to its genealogical predecessors in many ways, the currently proposed product improvement program will include the radically new changes in radar and ground sensor terminals necessary for the post-1985 battlefield.

The central object of the program will be the substitution of an electronically scanned (E-SCAN) antenna for the conventional fixed beam antenna and its operational limitations. Specific improvements will include:

- The ability to quickly scan a very large area of the battlefield without flying a long track;
- A rapid scan rate that will allow the system to track the path, and project the future location of moving targets;

Figure 2. This SLAR imagery of Sierra Vista/Fort Huachuca area, including the Whetstone Mountains and Tombstone Hills, was taken during pre-production testing of the AN/APS 94F in 1979. Note the "moving target indicators," morning traffic on State Highway 90.

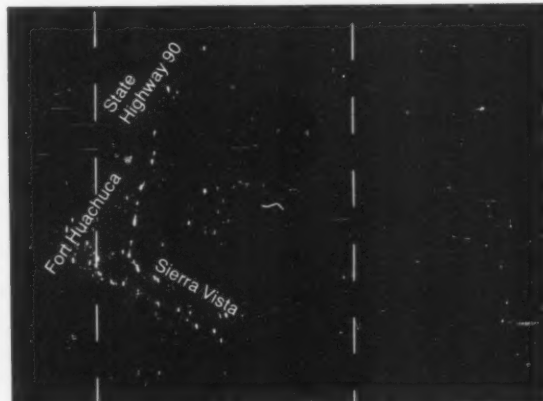
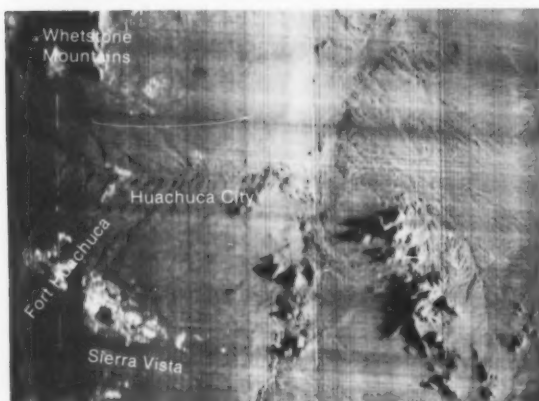


Figure 2.

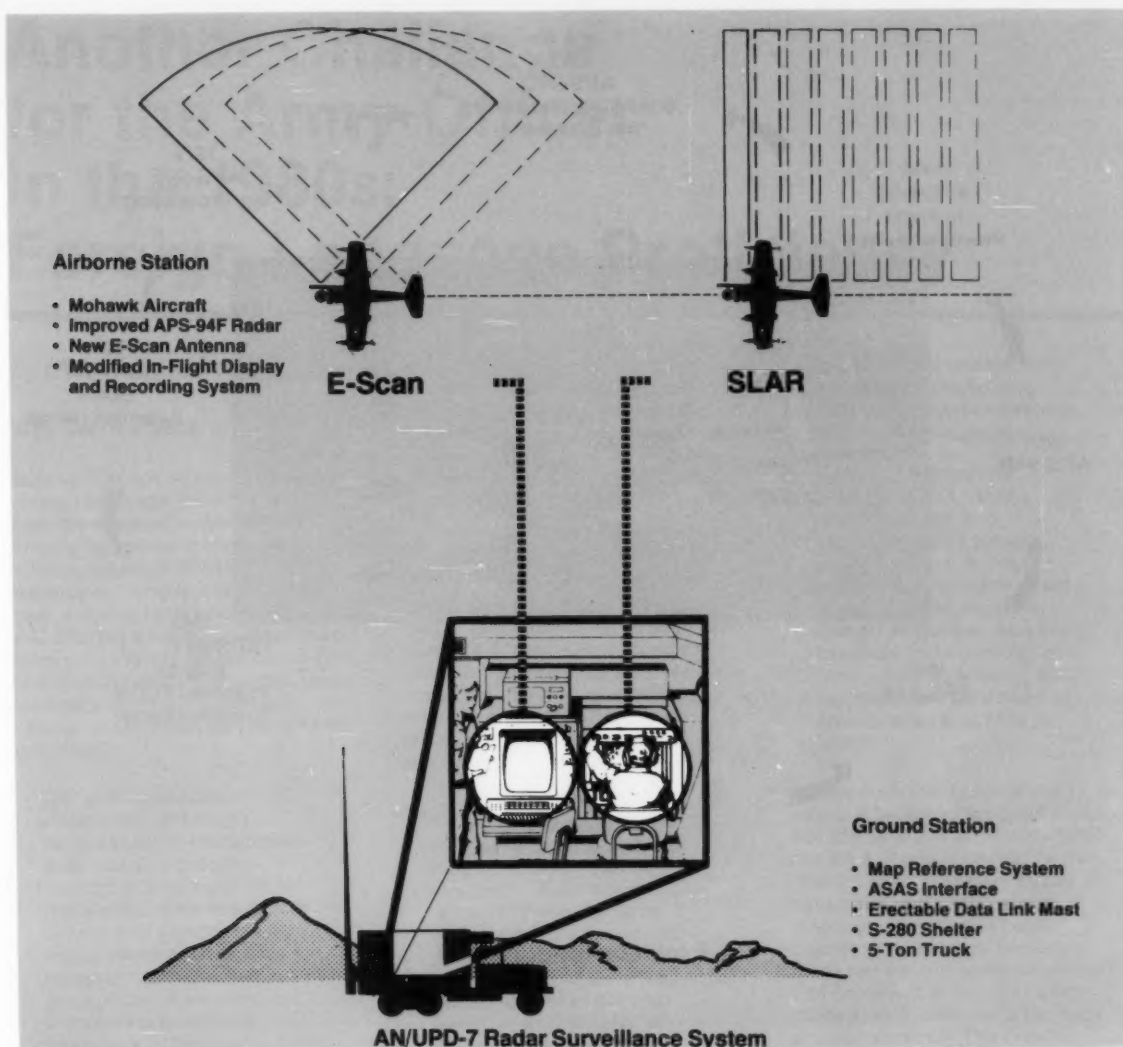
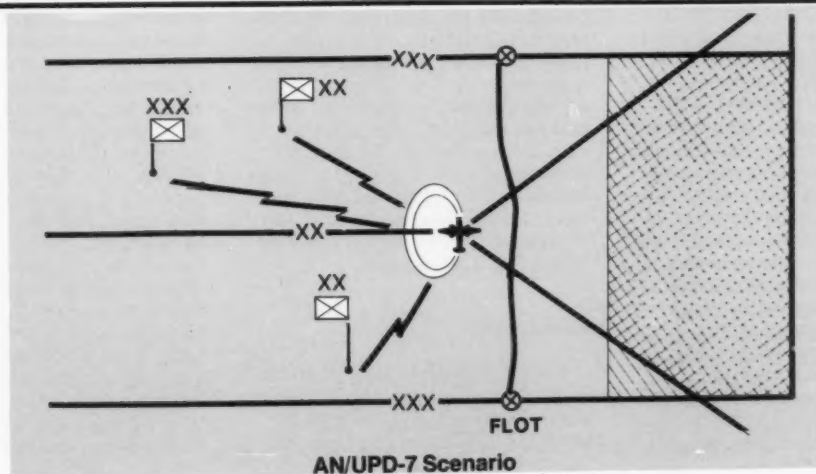


Figure 3.



tunities to work with the British than most of the other Allies, due mainly to the concentration of British forces in northern Germany. However, more opportunities for American-British unit interaction will occur within the next few years.¹⁴

Every other year, the British conduct **Operation Spearpoint** in the vicinity of Hannover in northern Germany. An American unit, one that could be dispatched north to assist the British Army-of-the-Rhine against the Soviets on the northern plains, is usually invited to participate. In 1976, Brigade 76, 4th Brigade, 4th Infantry Division enthusiastically undertook the mission. This was a true test of interoperability as the brigade had only arrived from Fort Carson, CO, eight months before.

The Americans and British have worked together since 1940 although most of the cooperation has been at higher staff as opposed to tactical unit levels. General Alexander Haig, Supreme Allied Commander throughout the late 1970s, has to be credited with making interoperability a reality during recent major joint NATO exercises.

To work effectively with the British in the field, one should understand something of the British psychology and recent history. Since 1945, the British have followed a policy of retrenchment in military and foreign affairs, relinquishing control over much of their empire while suffering the humiliation of a failing economy. Successive Labour governments reduced the military establishment to little more than a constabulary force used to perform police duties in Northern Ireland. The British Army-of-the-Rhine suffered particularly in morale and equipment readiness. Many officers were bitter that London cab drivers were better off financially than majors in "Her Majesty's Service."¹⁵ Sir John Hackett, former commander of NORTHAG, best summed up the disgust felt by the British military toward the policies of its own government: "... it was more widely realized that the Americans were doing for the British what the British had been too idle, too apathetic, or too parsimonious to do for themselves."¹⁶ However, with the advent of the Conservative government of Margaret Thatcher in the late 1970s, things began to change.

In assessing British military interoperability, we will examine command, control and communications (C³) and intelligence issues.

Although British and American methods of command are similar, tactical organizations differ. The British recently eliminated the brigade echelon

largely due to personnel and financial restrictions. We will consider the British staff structure at division level, comparing it with its American counterpart to determine how they can interoperate.

The US Army still uses the traditional four section staff (see Figure 4). The

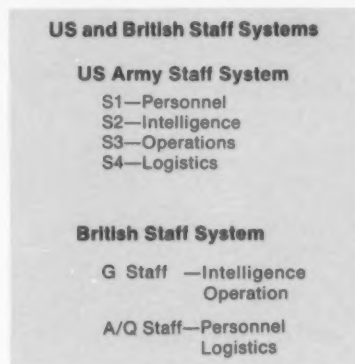


Figure 4

British, however, have only two major sections at division and below: the Adjutant-General (A/Q), and the G Staff. The former equates to our personnel and logistics staffs while the latter is a combination of our intelligence and operations staffs.¹⁷ Obviously, the US brigade intelligence officer would work with intelligence personnel in the G Staff. He should be aware, however, that there are intelligence specialists on the G Staff and others working in a support intelligence detachment.

The intelligence specialists on the G Staff perform the same functions as the US G2: assessing the enemy situation, collecting information and managing surveillance and reconnaissance resources. The intelligence detachment is similar to the US operational security people whose main responsibility is evaluation of friendly weaknesses and personnel, document and physical security. They also provide order of battle and interrogation services to the division they support. This intelligence detachment is very similar in organization and function to the military intelligence company that formerly supported US divisions.¹⁸

Just as the staff structures are vaguely similar, British intelligence planning documents and reports required from subordinate units do not differ greatly from the American. The British follow the practice of drawing up a five paragraph field order like the standard American order.¹⁹ After the initial order is distributed, the British 4th Division subsequently publishes operational overlays only, whereas the Americans like to publish, at the

minimum, a FRAGO (Fragmentary Order) to accompany the graphic.

Two different aspects of communications must be considered: equipment compatibility and language differences. Some of the most important problems lay in the area of equipment. The British employ AM/FM just as the Americans. Intelligence stations of both countries have the same frequency response and modulation capability and can pass traffic to each other. The communications, however, must be in the "clear" because the encrypting devices do not mesh.²⁰ American tactical units in Europe normally operate intelligence nets in the secure mode.

In addition to the security problem on the voice radio nets, another significant handicap is the inability of the British Bruin system, multichannel radio relay, to interface with its American counterpart. Efforts are underway to develop a newer British system, but this problem may still exist in the field.²¹

The equipment problems, though serious, can be overcome by equipment sharing, liaison teams and support from the signals squadron with the British division.

Operation Spearpoint-1976 pointed out another difficulty which was absolutely shocking to Americans who thought all along that they spoke and understood the language. The Queen's English is another language entirely. After sitting through Orders Groups where everyone thought the battle plan was completely understood, British and American units took to the field to accomplish what appeared to be entirely different missions. US liaison and intelligence officers, particularly inexperienced ones, should pay special attention to this potentially dangerous area of coordination.

A US Army Command and General Staff College feasibility study, conducted to determine whether an American brigade could be assigned organic to a British division, summarized the language difference this way: "Ironically, the greatest problem area resulting from the creation of an Anglo-American command would be the difficulty in clearly communicating ideas (plans, orders, etc.)."²² Although both armies use the same language, their vocabularies are different, especially with respect to military terminology. Officers of both forces use terms to designate tactical echelons (*regiment, for example*), which stand for very different units. Figure 5 provides a short comparison table of some common Anglo-American military terms. One might expect such ambiguities when dealing with the Germans, Belgians and other

British—American Military Terminology

| British | US |
|------------------------|--------------------------|
| Airportable | Airmobile |
| Parachute | Airborne |
| All Arms Battle Group | Battalion Task Force |
| Armoured Regiment | Tank Battalion |
| Tank Squadron | Tank Company |
| Tank Troop | Tank Platoon |
| Vital Ground | Decisive Objective |
| Important Ground | Key Terrain |
| Hides | Concealed Assembly Areas |
| Close Support Regiment | Direct Support Battalion |
| HQRA Division | Division Artillery |
| Forming Up Place | Attack Position |
| Start Line | Line of Departure |
| Final Assault Position | Final Coordination Line |

Figure 5

Allies, but hardly when working with the British.

An American intelligence officer will ask: What about signals intelligence and the British "all source" capability? The British look upon signals intelligence, as do the Americans, as a national-strategic rather than a tactical asset. During the last two years, however, a Signals Intercept Regiment was activated at Celle to support the British Army-of-the-Rhine. This unit has the capability of conducting jamming, intercept, and line of bearing operations on high frequency, very high frequency voice and morse communications. It can also intercept and conduct line of bearing on non-communications emitters. The Operations Officer of that Regiment is an American. The unit performs for the British what the 302nd and 502nd Army Security Agency battalions do for the US Fifth and Seventh Corps respectively.

The experience of the 4th Brigade, 4th Infantry Division, working in concert with the British 4th Division during Operation Spearpoint, showed conclusively that there are no insurmountable hurdles when an American brigade is placed in support of a British division. Foresight, training and prior planning would make such an arrangement even easier. The intelligence systems are basically interoperable.

Operation Standhafte Chatten — Working with the Germans

The fact that the Germans have their

12 divisions spread all over the country makes it probable that at one time or another an American unit will be working very closely with them. In Sir John Hackett's novel, *The Third World War*, the fictitious Commander-in-Chief, US Army Europe, briefing a congressional delegation, accurately described the working relationship between the Americans and Germans as follows: "We are very close to our German allies. Joint German-American tactical exercises, war games, demonstrations and discussions have led to a remarkable unanimity between two national armies whose last battle experience in Europe was against each other."²⁴

The Germans hold one major free play field maneuver each year, generally coinciding with *Reforger*. In 1978 an exercise was held entitled *Standhafte Chatten* because it was conducted near Kassel in the Hessian Hills. Warlike ghosts have supposedly inhabited these hills according to German mythology.²⁵ This exercise offered American officers a unique opportunity to actually work in one of the participating German panzer brigades. The 14th Panzer Brigade, home stationed in Koblenz on the Rhine, is the sister unit of the 4th Brigade, 4th Infantry Division located further south on the same river at the old Roman city of Wiesbaden.

The German staff structure at brigade level is identical to its American counterpart, having the four traditional staff sections. The brigade S2 section looks very familiar to an American, except

there is no assistant S2. The average German brigade has a major as the intelligence officer, with a master sergeant assisting and probably one other junior enlisted man. The American system tends to place MI officers in intelligence positions while the German army, like many other armies, has no distinct intelligence career field. The S2 is a combat arms officer. In the 14th Panzer Brigade he is, in effect, the night operations officer responsible for the compilation and publication of the next day's battle plan in addition to normal intelligence duties.

German intelligence planning documents and reports should present no major problem to any American with a reading knowledge of German. The Germans, more than the British and the Americans, believe in detailed graphics on situation maps and overlays to the point where they become overly "busy." An American must concentrate on mastering the difference in graphics before he can operate and interpret them comfortably. Like their American counterparts, the German's attempt to publish a fully written order whenever possible. The orders are very detailed, particularly in the area of intelligence and operations.

As with the British, the only major equipment problems stem from the incompatibility of communications security equipment and multichannel radio relay. Contrary to American practice, the Germans do not secure their FM communications nets below brigade level.

Liaison and intelligence officers working closely with German units should have a working knowledge of Hoch Deutsch (High German), the commonly spoken and understood language in central and northern Germany. Casual contact presents no major problem since Germans now study English at the secondary level, speaking and understanding it with proficiency. American officers assigned to the Seventh Corps in southern Germany face another linguistic nightmare, which surprisingly enough, plagues the Germans themselves. The mountain troops of Bavaria with their telltale edelweiss insignia speak "Bayrisch" not German. Other Germans find this dialect difficult to understand.

Language problems present Americans with somewhat more of a problem with the Germans than with the British, particularly in tense, fast moving situations. Continued linguistic practice and exposure will eliminate this handicap.

Americans at tactical unit levels who apply themselves to language study should have minimal difficulty interfac-

ing with German intelligence staff personnel. The American should be fairly knowledgeable of military operations in general and expect to perform more than just intelligence functions.

As with their British and American counterparts, German brigade S2s rely upon divisional assets for order of battle, interrogation, counterintelligence and signals intelligence support. The flow of information downward seems somewhat more restricted than in the other national intelligence operations. The Germans remain adept at good basic combat intelligence reporting and tactical aerial photography.

Operation Blue Fox— Working with the Belgians

The Belgians maintain a corps with two divisions in Germany. Both of these divisions are currently understrength as financial constraints and previous unsuccessful colonial interventions have taken their toll on Belgium's combat readiness.

Despite hard times, the Belgians struggle to meet their NATO commitment. Each fall, they invite Allied units to participate in their major maneuvers. During the past few years, they have consistently invited a brigade of the Eighth Infantry Division to travel north and thicken their ranks.

Exercise Blue Fox took place in 1977 in the 1st Belgian Corps area. The 3rd Brigade, Eighth Infantry Division served as part of the 1st Belgian Division. The brigade had difficulty maintaining contact with the division G2, because there was no FM intelligence net as in American units. The basic lesson learned by the Americans was that not much intelligence information could be expected from the Belgians once the operation began. The US brigade felt pretty much on its own.²⁶

What FM communications the Belgian Division did have were not in the secure mode. The Belgians also did not have a multichannel radio relay capabil-

ity as an alternate means of staying in touch with subordinate brigades. This is something US units rely on heavily.

The US brigade became deluged with documents requiring translation from French and Flemish. In order to support this brigade, it took all the French translation resources of Fifth Corps and CENTAG to wade through all available material one week prior to the exercise and even then it was not all translated.²⁷ The number of Americans with a working knowledge of German may seem small, but the number with a grasp of French is even smaller.

Liaison teams performed well, due to the good fortune that the Belgians were fluent in English. The Americans were basically helpless linguistically. Attempting to use French, or worse, German with a Flemish officer can be extremely touchy. It requires a lot of diplomacy to deal with an armed force comprised of two peoples who are essentially at civil war. The Flemish feel discriminated against in higher education, government and the army.

The Belgians had a Communications Reconnaissance Regiment supporting their Corps. This unit was similar to the British Signal Intercept Regiment and the US Army Security Agency battalions. Recent information indicates that, due to budgetary restrictions, the Belgians have disbanded this unit and don't plan to reactivate it at least until 1985. Whether their signals intelligence people with their special skills will remain on active duty is questionable.

Despite all the shortcomings, the American unit that participated in **Exercise Blue Fox** concluded that "... with proper training and adequate preparation/planning a multinational force can overcome potential interoperability problems and operate as an effective fighting element."²⁸

Interoperability—When?

Now that our neophyte captain has been introduced to various national

tactical operations, what lessons may apply to all US tactical intelligence staff officers arriving for duty in Europe?

FM 100-5 recognizes the interoperability aspect of European duty and warns officers that "... there will be differences between the various forces which encompass more than the easily recognized variation in language. They will include variations in doctrine, organization, training, logistics, food, and customs as well."²⁹ The only specific guidance provided is that boundaries between national forces be watched carefully, standard recognition signals should be used and liaison officers should be bilingual and trained prior to hostilities.³⁰

The US Army in Europe has initiated programs to enhance interoperability. For example, soldiers of all grades must study a minimum of 40 hours of German at the outset of their tour. General George Blanchard, former Commander-in-Chief, US Army Europe, the prime mover behind these language familiarization programs, believed that the basic element in the combat equation was people and their ability to communicate. In 1978, he wrote: "Language interoperability is the key and the base on which any operating sense of cooperation should be built. For in the heat of battle, there will be no time to request a translation of a fire mission or go directly to a dictionary to discover what ANGRIFFF means."³¹

NATO operates various schools in the member countries of the Alliance. Unfortunately, the only courses pertaining to the intelligence field at present deal with electronic warfare. These are taught at the Center for Electronic Defense at Anzio, Italy and the SHAPE School at Oberammergau, Germany. Both are valuable not so much for the doctrine taught but for the sharing of experiences and problems in a joint environment.

The best interoperability training at lower unit levels remains the joint field exercise. Here the officer can practice

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|---------|-------------------|-------------|-------------------|-------------------------------|
| NATO | Cosmic Top Secret | NATO Secret | NATO Confidential | NATO Restricted |
| US | Top Secret | Secret | Confidential | |
| UK | Top Secret | Secret | Confidential | Restricted |
| FRG | Streng Geheim | Geheim | Vertraulich | VS-Nur Fur Den Dienstgebrauch |
| Belgian | Tres Secret | Secret | Confidentiel | Deffusion Restreints |
| | Zeer Geheim | Geheim | Vertrouwelijk | Deperkte Verspreidlung |

Figure 6. Security Classification

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his language skills and lay the foundation for his later professional development by actually working with our Allies. The intelligence officer should be able to function comfortably, not only with his own national document/information security systems, but also with the NATO classification system. Figure 6 indicates the national classification designations and levels. More combined war gaming, seminars, and field exercises would appear to be the answer. The hard economic times afflicting Western nations recently have slowed efforts toward greater interoperability.

The need for greater training and doctrinal development in interoperability is apparent. As one commentator put it: "... the fundamental 'lesson' or 'moral' from past experiences in World War II is plan, train, organize for allied interoperability—or have it anyway."³² Department of the Army should make provision for interoperability training in the future. In the meantime, professional intelligence officers have the responsibility of educating themselves in the history, languages, and customs of the forces with whom they may have to fight against the Soviets. Maybe the time will not be far off when officers are assigned to Europe better prepared to perform in interoperability situations than our newly assigned captain.

Footnotes

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23. *Ibid.*, p. C-11.
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27. *Ibid.*, p. 9.
28. *Ibid.*, p. 3.
29. US Army Field Manual 100-5, **Operations**, p. 13-4.
30. *Ibid.*, pp. 13-7 and 13-8.
31. General George S. Blanchard, "Language Interoperability—A Key For Increased Effectiveness in NATO," **Military Review**, LVIII (October, 1978), p. 59.
32. Cooling and Hixson, p. 47.







to Third World hot spots.⁹ An outspoken advocate of increased language education in American schools and colleges, Rep. Leon E. Panetta (D-CA) points out, "If we had to suddenly take a division into the Middle East, or into an African nation, we would have very little capacity for people who are knowledgeable of the language."¹⁰ In a recent interview, he stressed that America should sharply increase language education to sustain the military: "There has to be a recognition of this as meeting a very real national security need—as important as development of a weapon, as important as the training of a man to fight in hand-to-hand combat."¹¹ Figures released to the Associated Press as of 31 August 1980 indicate the following percentage of fill of authorized language-essential military billets:

| | |
|------------|---|
| Army: | 90 percent of 1,817 officer positions 67 percent of 3,525 enlisted positions |
| Navy: | 72 percent of 1,260 officer/enlisted positions |
| Marines: | 75 percent of 68 officer positions 58 percent of 387 enlisted positions |
| Air Force: | 83 percent of 185 officer positions 81 percent of 2,689 enlisted positions ¹² |

It is also doubtful whether these figures accurately reflect the number of "fully-qualified" linguists in the various services.

In a similar vein, Rep. Bill D. Burlison (D-MO), on the House Intelligence Committee, said the panel is "gravely concerned about the shortfalls which exist in critical language skills, and particularly the shortages which are occurring in high-priority intelligence programs."¹³ His committee has directed that "US intelligence and defense officials develop and submit with their fiscal 1982 budget a broad-ranging program to alleviate the problems."¹⁴ In December 1980, top-ranking officers of military intelligence agencies held a conference at the Defense Language Institute in Monterey, CA, to assess military linguist shortages, a favorable indication of "the higher level of attention the Department of Defense is giving to this issue."¹⁵

The Intelligence Officer

During a recent visit to the US Army Intelligence Center and School at Fort Huachuca, AZ, MG William I. Rolya, Commander of the Intelligence and Security Command

(INSCOM), gave his views on the importance of foreign language learning: "Every intelligence commissioned officer and non-commissioned officer should know another language and should be well-versed in an area of the world . . . This is an Army problem—not just an INSCOM problem."¹⁶ General Rolya further emphasized, "An intelligence officer who doesn't know another language is not an intelligence officer."¹⁷

Why the Problem? A Trend

At a time when foreign language skills are at a premium in all aspects of our international endeavors, our country is in a nationwide downward trend, a manifestation of the perpetual rise and fall of language learning

in the United States. Every time a major war breaks out, America begins a crash program to give selected soldiers a working knowledge of the listening and speaking skills of the target language. Professors or other civilian linguists are often placed in vital intelligence posts until the crisis subsides; then the interest level and funding subsides correspondingly.

Thanks to Sputnik in 1957, a national momentum developed to catch up with the Soviets scientifically. A by-product of this effort was the National Defense Education Act of 1958, which strengthened language programs at all levels of instruction.¹⁸ Oriental languages surged in importance to America in the 1960s, but the 1970s witnessed the end of the post-war baby boom, and, in the face of declining enrollments, administrators again began to cut foreign language offerings in the schools. High school, college entrance and Ph.D. language requirements have since been rescinded in large numbers, along with other "non-essentials." Even the United States Military Academy shaved its four-semester foreign language requirement to three semesters in 1978.

Good Teachers Needed

During slumps in emphasis on language learning, occasional "Ugly American" incidents fuel the tendency toward American isolationism or sway the balance away from the study of humanities toward technocracy. Unfortunately, the problem is worse for the fact that there exists "an urgent need for better-trained teachers and for extensive retraining of those already serving in the nation's classrooms, particularly in view of widespread expert agreement that the decline in foreign language enrollments is in large measure a response to poor instruction."¹⁹ The President's Commission further summarizes this problem as follows:

Americans' scandalous incompetence in foreign languages also explains our dangerously inadequate understanding of world affairs. Our schools graduate a large majority of students whose knowledge and vision stops [sic] at the American shoreline, whose approach to international affairs is provincial, and whose heads have been filled with astonishing misinformation.²⁰

Where to Learn a Foreign Language

Suppose that an American Army officer recognizes the seriousness of the lack of trained linguists but has not been fortunate enough to have been involved in FLES (Foreign Languages in the Elementary Schools),²¹ or did not avail himself of the albeit limited language offerings in high school, and was too "busy" in college (or no foreign language requirements were in effect). Where can he go to increase his cultural awareness, develop second language skills and thereby enhance his own military qualifications and value to his country? There are actually many sources available to the beginning adult, in two general categories: civilian and military.

Civilian. National programs are available at community colleges, universities and graduate schools, as well as in certain specialty courses. These national foreign language offerings are surprisingly

consistent across the country in both classification and content and many are provided for the working adult in evening schools, weekend courses or quickie courses during vacation periods. More and more non-credit conversational classes are appearing in community bulletins, often covering a wide variety of language offerings—depending on the ethnic sources available in the area. Many native speakers can participate in these programs without holding college degrees. Universities and community colleges often provide their courses through extension programs, making use of local high school facilities.

If an officer plans to work on a graduate degree, almost any area of specialization useful to the military can be enhanced greatly (with a little extra effort, time and money) through the study of foreign languages. Indeed, a person can better understand his own language or culture when he views it from the perspective of a second (or third or fourth) language. In the case of French, for example, a large proportion of important Latin vocabulary found its way into English through the French language as "French is merely the modern form of the spoken Latin introduced into Gaul."²² Thanks to William the Conqueror, the British Isles received this French-Latin foundation in the year 1066. Consequently, the Elizabethan English of Shakespeare is well-dotted with French words, many of which are now footnoted in student texts for those who have not yet studied French. The English language's French heritage persists to this day. Many other languages have made similar contributions to the development of the English language.

Graduate degrees in such disciplines as area studies and international affairs, with their sub-components of literature, history, anthropology or political science, are naturally compatible with the study of languages. Unfortunately, however, area studies with concentrations in economics, law, sociology or business are in greater demand in today's society.²³

If an officer is not a former military dependent with years of overseas living, a Peace Corps volunteer, Mormon missionary or a product of a bilingual home (or even if he is), he might be able to take advantage of certain specialty programs. Examples include the Berlitz immersion language training method, imported language/cultural offerings like the

Alliance Francaise in New York City, or intensive courses like those provided by the American Graduate School of International Management in Arizona.

Self-study, through a myriad of college correspondence courses with accompanying tape programs, is another means of acquiring a second language. Language records or tapes are also readily available from many stores and libraries. In addition, native speakers living in the area, proud to convey their linguistic and cultural insights, can often be engaged as tutors.

Military. Army officers generally think of the Defense Language Institute (DLI) in Monterey, CA as the place to go to learn a second language. The Army-run DLI is the US government's largest language training school, handling more than 4,000 students each year.²⁴ While most officers cannot attend DLI in resident status, they can profit from numerous DLI publications wherever they may be assigned, thanks to Post Education Centers and Language Labs. Books, booklets and tapes may often be checked out and duplicated for private use or purchased at minimal cost.

United States Army, Europe (USAREUR) also sponsors the popular, and required, German Headstart and Gateway orientation programs for Army Personnel and their dependents assigned to Germany. These consist of a series of basic German language/culture lessons to develop initial awareness and conversational skills. Tapes are available with dialogues and other exercises for self-study or USAREUR classes may be conducted by qualified personnel prior to or after arrival in-country. Other languages are also available in this system.

How to Learn a Foreign Language

The Army officer who has discovered where he can get language training and why he should make the effort to learn a second language must also consider how the process occurs. Therefore, second only to *desire* in usefulness is a knowledge of language learning principles. It must be understood that what is contemplated is the development of a skill, much like playing the piano or basketball. Once the skill is developed through consistent effort, coupled with *desire*, it must be maintained; in fact, the goal should not

be merely adequacy or sufficiency or even a "working knowledge," but fluency.

Cultural differences must be learned, too, as pointed out by former senator J. William Fulbright:

Our heritage and our culture have caused most Americans to assume not only that our language is universal but that the gestures we use are understood by everyone. We do not realize that waving goodbye is the way to summon a Filipino to one's side, or that in Italy and some Latin-American countries, curling the fingers in a beckoning motion is a pantomime of farewell . . . Moreover, we like to think of ourselves as friendly, yet we prefer to be at least three feet or an arm's length away from others. Latins and Middle Easterners like to come closer and touch, which makes Americans uncomfortable.²⁵

The Four Skills

The four language-learning skills are usually classed in the priority of understanding, speaking, reading and writing. Listening and speaking skills are preeminent, so one is well-advised to seek a native speaker over an American teacher if the native has enough of a command of the English language to be able to relate to the difficulties American students have with foreign languages. This is especially important for adults who want to understand occasional rules—the whys and wherefores. A well-trained American foreign language teacher assisted by quality lab tapes is, however, a viable alternative to an Americanized native.

Deceptive Cognates

In addition to the ability to compare and explain the formation of the target language sounds, the teacher should also be well-versed in the "deceptive cognate" problem: words commonly found in English and other languages which look the same but have different meanings:

| | |
|---------|---------------|
| English | French |
| cave | cave (cellar) |

patron patron (proprietor)
pain pain (bread)
fat fat (conceited)²⁶

Language students should be aware of this problem, for it is bigger than many realize. Deceptive cognates also exist within English itself (compare US and British "pavement"), especially military vocabulary.

Methods

The debate continues as to which method of learning a language is best. A bilingual environment naturally produces the best results, especially if both languages are isolated, such as speaking German with one's parents and Italian with one's grandparents. Many feel that it is best to begin learning a language in the third or fourth grade.²⁸ In teaching adults, however, these early processes can only be imitated through various methodologies. For a time, there seemed to be a consistent language-teaching evolution, starting with the "classical" or "grammar-translation" method, followed by the upstart "direct" (immersion) method, then the "reading" method, and finally the well-accepted combination termed the "fundamental skills" or "audio-lingual" method.²⁹ More recently, this evolution has been questioned, and other combinations have been proposed. While it is useful to know something of the various philosophies, language students do not really have to worry about which method to use, because modern books, tapes and other materials are integrated and arranged according to a proven system.

Which Foreign Language to Learn?

It might seem hard to decide which language can be of value to the military and to the learner. Obvious considerations might be family heritage, prior exposure to a certain language, foreign travel already completed or anticipated and cultural preferences.

Vocational goals should also be evaluated and matched to the preferred language. To make an informed decision, a source such as Mario Pei's *The World's Chief Languages* should be consulted.³⁰ The Defense Language Aptitude Test (available through Post Education Centers) is useful in determining

which language might be selected. A high score might indicate the ability to learn more difficult languages such as Chinese or Russian. The "needs of the Army" should also be considered in any decision.

Controversy

A recent controversy between the House Appropriations Committee and the military academies and ROTC concerning the relevance of language training for officer trainees brought about a strong response from the Department of Defense (DOD). The Committee rightly observed that military people assigned overseas "are not able to reflect most favorably on the US due to a general weakness in communication skills."³¹ Part of the blame for this situation was placed on DOD's language training options for officers through the academies and ROTC. It was argued that "although the three military academies provide extensive offerings in foreign languages, a cadet or midshipman is free to enroll in a language that may be of little or no use to the individual or the service during his military career."³² The Committee specifically recommended that West Point cadets be required to take German at the expense of "more popular but less useful" languages since all could expect to be stationed in Germany at some time during their careers.³³ The reasoning was practical but extremely shortsighted. DOD rejected the House recommendations in its report to the Committee in 1979 by first noting the language offerings at the academies: Chinese, French, German, Russian and Spanish (at all three academies); Portuguese and Arabic (at USMA), and Japanese (at the Air Force Academy). "These eight languages represent the spoken languages of over half the world's population and reflect the global interests of the US . . . Therefore, each language taught at the academies is considered highly relevant and useful to the career military officer."³⁴

So which language is most important? It is good to become an expert in a specific area, including its language(s) and customs; it is also good to learn as much as possible about the foreign country in which one is assigned. Further, it should be remembered that any and all foreign languages can be the "most broadening and the most cultural elements of a liberal education."³⁵

The Challenge

It is heartening to note that a "National Commission on Foreign Language and International Studies" has been recommended, along with many other forward-looking proposals, by the President's Commission.³⁶ But the challenge is actually twofold: the Army officer must become qualified in a foreign language and must work to maintain that proficiency and the Army must provide greater incentives, including time and means, for officers to develop and maintain their skills.³⁷ It cannot be denied that foreign language skills have been and remain critically important to this country. We must immediately begin to foster this national means of international understanding.

Footnotes

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The Future That Is Upon Us: A Case for the JINTACCS Program

by MAJ Frederick M. Stuhke

As the first of the new weapons systems of the 1980s and 1990s reach the battlefield in the leading edge of today's technological revolution, the limitations of the current outmoded manual command and control (C²) systems are becoming readily apparent: the battlefield command is 1) unable to effectively handle the incoming information from the new weapons systems in a timely manner so as to influence the battle, and 2) unable to "talk" to his counterparts in other services or readily integrate information from their systems with his own. The first limitation will eventually be solved by the introduction of automated C² systems planned or under development. The second limitation, however, must be addressed now. Much of this problem can be solved through the standardization of information formats and protocols which will also better prepare the field user for automated C² systems which will eventually introduce a standard "language" and format.

One such program is the Joint Interoperability of Tactical Command and Control Systems (JINTACCS). JINTACCS, an outgrowth of an earlier program, is designed to increase tactical-level information interchange between the services through the use of standardized formats, procedures and protocols, ultimately in an automated environment. It represents an attempt at the joint level to rationalize and standardize selected messages which services/agencies would exchange during tactical operations.

In the area of system design, emphasis was initially placed on the automated man-readable, machine-processable aspects of the JINTACCS program. In the absence of automated systems during the initial test and evaluation of the program, however, the emphasis shifted toward the equally significant manual aspects of the standardized formats and procedures for exchanging information. Testing conducted during 1980 at Fort Monmouth demonstrated how the

services/agencies can exchange time-critical information and resolve part of the difficulties facing battlefield commanders today.

The problems addressed by the JINTACCS program are also intra-Army ones and the Army can incorporate much of what has been developed under JINTACCS for intra-Army use, thereby standardizing many messages and reports throughout the Army (in line with CSA thinking) and simplifying the transition to formatted information processing systems by reducing the "mutual interference" problem which arises when personnel must work with two different systems. Standardized procedures and protocols for dealing with today's specific C² issues can be included in Army systems development, doctrine and teaching.

While standardization as a concept is never faulted, the difficulties inherent in reaching a consensus on a standard format raise a chorus of protests against the problems of standardization:

- The Army must learn a "new" language introducing new and confusing abbreviations.
- Battlefield information with all its nuances does not lend itself to "fixed" message formats designed for automation.
- Programs dealing with automation are generally controlled by engineers and technicians and are not responsive to the needs of the field user.

If standardization is to succeed, compromises must be made. Soldiers will have to learn some new terms and abbreviations in the interest of joint/NATO standardization and more effective and timely communications. By incorporating as much of JINTACCS as possible into Army doctrine and service school teaching, the difficulties of the "new" language will be minimized. Remember that much of the JINTACCS program is already in existing doctrine or will soon be adopted. As the effort continues, many of the problems found

in any new system will disappear until JINTACCS procedures seem no more difficult than a new SOP.

Using manual systems, the Army has, for years, processed "fixed" formatted messages without difficulty in the areas of fire support and nuclear weapons operation. The use of fixed formats with selected vocabularies enables the codification and standardization of information so that it can be processed rapidly by all message handlers. Since all terms are fixed, exact meaning is conveyed. This is critical for intelligibility. As Army personnel learn this new system, they will think in terms of its resulting in a fuller appreciation for its potential.

Message formats, protocols and procedures are only as good as the services' efforts to make them usable. Army involvement in the JINTACCS program should be viewed as an evolving process. At the service school level the Army must become fully involved. Intra-Army requirements must be identified. The messages and procedures must be tested in exercises and service schools and carefully evaluated. Only in this way will the Army be able to address its own needs as a field user and in turn recommend changes at the joint level.

Standardization involves tedious, protracted give-and-take sessions within the Army, with the sister services, and with NATO on what to send, how to format it, and terms understandable by all. But only through standardization will the Army be able, in the near term, to quickly sort, process, read and interpret data to enable commanders to be successful on the battlefield. The significance of the JINTACCS program is beyond measure. The need is clear.

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(continued from preceding page)

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United States Army Intelligence Seal

Description

Upon a dark blue disc, enclosed by an oriental blue ring, edged inside and outside with silver gray, and inscribed with the words UNITED STATES ARMY INTELLIGENCE and in center base between two stars the numerals 1776 all in silver gray, a coat of arms blazoned as follows:

SHIELD:

Tierced in pairle reversed or, gules and azure, in dexter chief a sphinx proper, and in sinister two keys in saltire surmounting a flash palewise of the first; in base surmounting a sword point up a compass rose all of the last, charged with a heraldic rose of the first and third.

CREST:

On a wreath of the colors or and azure, a helmet of Tallmadge's Dragoons in proper colors, charged with a rose of the first.



The MI Soldier's Creed



**I am a Soldier first, but an
Intelligence Professional
second to none.**

**With pride in my heritage,
but focused on the future.**

**Performing the first task
of an Army;
To find, know and never
lose the enemy.**

**With a sense of urgency and
of tenacity,
Professional and physical
fitness,
And above all:
Integrity—for in truth
lies victory.**

**Always at silent war while
ready for shooting war;
The silent warrior of the
Army team.**

USAREUR Viewpoint



by Major General
James A. Williams
and Colonel John A. Lasley, Jr.

Military Intelligence people know the importance of considering enemy, terrain and weather in their analysis. Although the emphasis in this article will be on weather, the intent is not to downplay the importance of considering enemy and terrain, but rather to increase the emphasis placed on environmental impacts relative to historical levels.

History is filled with examples of how the environment was a significant and often determining factor in the outcome of major battles. One such famous example was Napoleon's experience with the Russian winter. The lesson Napoleon learned was relearned by Hitler more than 100 years later. More recently, in a different part of the world, the North Vietnamese used the persistent overcast conditions of the Northeast Monsoon to move supplies and to conduct major offensive operations with minimum exposure to US air power. In this way, exploitation of environmental impacts was a key factor in the North Vietnamese ability to avoid day to day operational disasters and eventually achieve their objectives. Even more recently we saw the impact the environment can have on an operation with the abortive Iranian rescue attempt. These and other historical examples show that the effects of the environment can be catastrophic and that the weather can provide an advantage or disadvantage depending on the tactics involved. How these events relate to the USAREUR

The Role of Weather Support in USAREUR

mission will be discussed in the following paragraphs.

Military environmental services provide a spectrum of support ranging from merely useful information to highly valuable decision assistance. The information end of the spectrum contributes nice-to-have information, but in a crunch it can be done without. Decision assistance, on the other hand, is a combat multiplier. As weapon systems become more complex, environmental sensitivities increase. This provides more opportunity to operate at the decision assistance end of the spectrum. This concept goes hand-in-hand with the recently developed approach for formatting decision assistance called Intelligence Preparation of the Battlefield (IPB). The integration of environmental impact information into IPB requires a change in the way "weather" information is presented—this will be discussed at greater length later in this article.

Those who have spent time in Europe realize that weather conditions here have more impact on weapons employment than the weather found in CONUS training areas. Figure 1 shows a comparison of flying weather at several CONUS Army airfields with the same conditions at some Army airfields in Germany. The criteria used in this comparison are the percent occurrence of ceilings* of less than 1000 feet and visibilities of less than two miles at 0800 during January. Such conditions occur less than 30 percent of the time at the stateside locations, and up to 80 percent of the time at the USAREUR airfields. In other words: In many cases we test and train in good weather areas only to wonder why our equipment and methods do not work in Europe. Coupled with the increasing sophistication of Army weaponry, this tends to amplify the importance of environmental services as a combat multiplier.

*Cloud ceiling is defined as the height ascribed to the lowest layer aloft with 5/8 or more summation total sky cover which is predominantly opaque, or the vertical visibility into a surface based obscuration.

Environmental services are also important in the development of an understanding for the implications to be derived from climatology records. It is a well-known fact that "bad" weather does not necessarily affect both sides of a battle or operation equally. That is, the environment may affect the defender and attacker differently. Therefore, if we have the flexibility to adjust our operations to take advantage of the weather and make it work to the detriment of the enemy, then we have realized a combat multiplier effect. To obtain the needed flexibility requires some detailed, advance planning. This is where climatology enters into the picture. Climatological data provide us with statistical averages and average values are useful in developing tactics and plans. Consider this example: An average day in the month of December at Fulda, Germany sees a little more than eight hours of daylight. During those eight hours, the combined percent frequency of occurrence of ceilings less than 1000 feet and visibilities of less than one mile is approximately 30 percent. That means that on the average (assuming that the occurrence of ceilings and visibilities of less than 1000 feet and one mile is spread throughout the month, which, of course, it is not the case in real life) we have approximately five and one-half hours per day to perform a mission requiring daylight, ceilings of at least 1000 feet and visibilities of at least one mile. This is a little less than 23 percent of the 24-hour day; the type of mission that might be affected by these conditions is close air support by the A-10 as it is configured today. Now, to clarify the point about the implications to be derived from climatology even further, consider the following statement: Certain mission impact parameters may be inversely correlated with each other. To understand this, add to the above example of climatology from Fulda the fact that the mean daily temperature in that region in December is around 30 degrees Fahrenheit. This implies that the ground will be fairly solid, if not completely frozen. Taking all the effects in this exam-

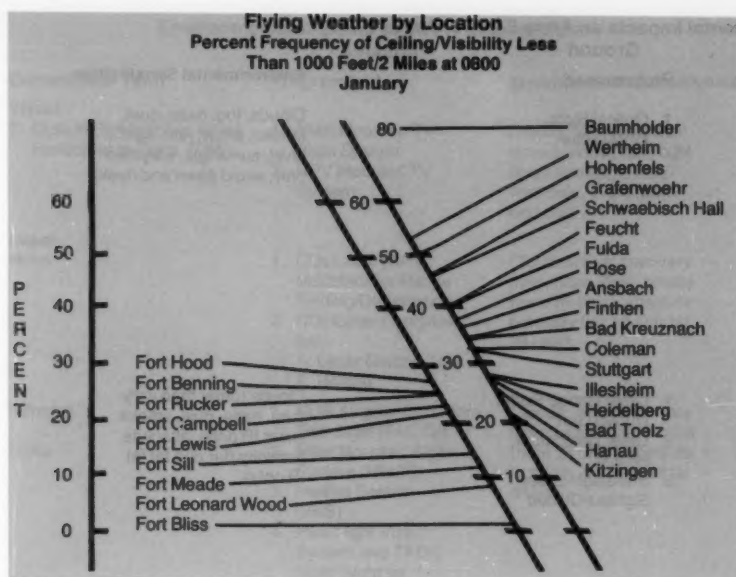


Figure 1.

ple together, we may recognize an inverse correlation: Trafficability may be good while the "weather" is bad. The impact of this knowledge on the development of tactics is obvious: we are left with about 23 percent of each day to carry out effective close air support missions while the enemy has nearly 100 percent of the day to move his tanks and trucks. Now that we are aware of this inverse correlation, we can plan accordingly.

No one is more keenly aware than Military Intelligence people of the fact that we are outmanned and outgunned in the NATO theater. To help us offset this imbalance, a number of new weapon systems are being, and will continue to be, introduced to European units. These systems will increase our firepower but because of their complexity, they tend to be more susceptible to environmental degradation. For example, a large percentage of the new weapons rely on some form of Electro-Optical (E-O) vision enhancement/target detection/weapon guidance system. Figures 2 and 3 list some current and programmed Army E-O systems and the environmental parameters that impact these systems. We can see from these figures that the full range of weapon systems and consequently the full range of missions from ground to aerial operations is affected by the environment.

As an example, let's take infrared (IR) vision enhancement devices. But before we go into this example, some background material may be necessary. Many atmospheric constituents

(mainly water vapor, carbon dioxide, ozone and oxygen) absorb radiation propagating through the atmosphere. There are two ranges of minimum absorption that are called "windows." The two atmospheric windows exist in the wavelength ranges from 3.5 to 4.2 microns and 8.5 to 13 microns. Most currently available IR vision enhancement devices operate either in the 3 to 5 or the 8 to 12 micron range of the spectrum, coinciding roughly with the two atmospheric windows. Experiments have been conducted to determine just what the effects of the various atmospheric absorbers are. That brings us back to our example. In one instance, IR vision enhancement devices were used to measure up to what distance a truck could be seen in dense fog. Normal (unaided by the IR device) visibility in the fog was 400 to 600 feet. Using a device in the 3 to 5 micron range, the truck disappeared from view at 700 feet. With an 8 to 12 micron range device the truck was still visible at 800 feet. Therefore, vision enhancement devices operating in different wavelength ranges are affected differently by the same environmental conditions. This knowledge can be used to successfully carry out such operations as repositioning listening posts and resupplying. As a matter of fact, during **Reforger 80** it was reported that the 2d ACR used fog to cover a shift in its position and launch a successful encirclement operation. While recognizing the apparent disadvantage of using vision enhancement devices operating in the 3 to 5 micron range in fog, some studies

have indicated that such devices are more effective in rain than devices operating in the 8 to 12 micron range. So it is obvious that the advantage of one spectral window over the other is not clear-cut and ideally a commander would have the option of choosing between devices operating within the two windows. Such an option is not currently available. Therefore, weather conditions, in addition to other obscuring phenomena on the battlefield, must be considered. But not only E-O weapons suffer the impact of the environment; similar conclusions can be drawn for many other facets of the mission. Consider this example: An Army commander is planning a chemical counterstrike and is obviously concerned about friendly casualties. Although the prevailing movement of weather systems across central Europe is generally from west to east, local wind variations do occur. We normally get weather observations, including wind speed and direction reports from weather observers at the corps, division and brigade airfields, but not from the battalion level. Without being certain of wind speed and direction in the area where the chemical counterstrike will take place, the commander takes a great risk of being foiled by the environment. For this reason, the USAREUR Forward Area Limited Observation Program or FALOP has been initiated as directed by USAREUR Regulation 381-2. In this program, Army personnel at forward locations take limited weather observations and relay them to the Staff Weather Officer (SWO) via Army tactical communications. The SWO cannot meet the Army's stated mission requirements in this scenario without timely FALOP data. The emphasis is on the word *timely*, because the utility of meteorological data decays rapidly under changing weather conditions. Again, we see that the environment impacts a facet of the mission.

The environmental impact combat multiplier has received Department of the Army level attention. A 12 June 1978 report by the US Army Audit Agency characterized meteorological support to the Army as fragmented and charged that Army weather support needs were not stated adequately to Air Weather Service or sufficiently reviewed to insure that all weather parameters and critical values were considered when making tactical decisions and in the deployment of personnel and equipment. The Army commander recipients of this audit report agreed with all conclusions of the audit and efforts to solve the problems identified commenced. USAREUR re-

Environmental Impacts on Army Electro-Optics Ground

| Current/Near Term Visual | Programmed | Environmental Sensitivities |
|---|---|---|
| <ol style="list-style-type: none"> Optical Sights/Periscopes Light Intensifiers <ol style="list-style-type: none"> AN/PVS-5 Night Vision Goggles AN/PVS-4 Starlight Scope AN/TVS-2 with Vulcan Ad Missile AN/TVS-5 Crew-Served Weapon Sight AN/VVS-2 Driver's Night Vision Periscope Viewer (for Armor) | <ol style="list-style-type: none"> Optical Sight, DIVAD Gun | Clouds, fog, haze, dust, smoke, snow, rain, light level, sun angle, (daytime only, avoid dawn and dusk). |
| Laser | | |
| <ol style="list-style-type: none"> AN/GVS-5 Laser Range Finder AN/PVS-6 Laser Range Finder Ground Laser Locator Designator (GLLD) for Copperhead Artillery Laser Range Finder/Designator on M60A2 and M60A3 to Guide Shillelagh Missile AN/PAQ-4 Pulsed IR Laser Aiming Light used with: <ol style="list-style-type: none"> AN/PVS-5 Night Vision Goggles AN/GVS-5 Laser IR Observation set | <ol style="list-style-type: none"> Laser Range Finder, DIVAD Gun Laser Designator, Hellfire Shillelagh-Laser-Sighted/Guided | Clouds (other than very thin), haze, dust, smoke (near IR only), absolute humidity (far and far far IR only). |
| Infrared | | |
| <ol style="list-style-type: none"> Stinger Heat Seeking Missile AN/PAS-7 Handheld Thermal Viewer MK-28 IR Detector with Chaparral Air Defense Missile AN/VSG-2 Tank Thermal Sight for M60A3 and XM-1 AN/TAS-4 Thermal Night Sight for use with GLLD and TOW AN/TAS-5 Thermal Night Sight for use with Dragon | <ol style="list-style-type: none"> IR Tracker, Roland AN/TAS-6 TOW Thermal Night Sight (Long-Range) Forward Looking IR (FLIR) for Improved Chaparral High Sensitivity Tank FLIR Dual IR/UV Seeker for Improved Chaparral Multi-Spectral (Visual-Far IR) Night Sight | Clouds (other than very thin), haze, dust, smoke (near IR only), absolute humidity (far and far far IR only). |

Figure 2.

sponsored strongly via the ODCSI Project Vision Master Plan published in early 1979. Tactical environmental support requirements were stated in Annex C of the Plan, and the USAREUR Weather Effects Data Handbook (USAREUR Pamphlet 115-1) was published. Concurrently, the Intelligence Community at Fort Huachuca developed the new doctrinal approach for formatting decision assistance called Intelligence Preparation of the Battlefield. IPB addresses enemy, terrain and weather. As indicated earlier, IPB requires a departure from the classical format for weather briefings. The TV-type weather briefing is adequate for conveying weather information when environmental effects are not a key element in the decision, but if these effects are important, decision assistance is required, and

decision assistance requires tailored formats referred to as IPB templates. It is envisioned that enemy, terrain, and weather transparent templates will be used routinely and that when overlaid into one composite picture, they will clarify operational requirements of the mission. The expected outcome is optimum decision assistance for the commander. We have some capability today to provide decision assistance when environmental effects are involved, but to develop a more encompassing capability it is important to define tactics and missions which require environmental decision assistance well in advance so that the SWO can develop production procedures. Figure 4 is an example of a format routinely used to brief COMCENTAG during exercises. Note that only three weather

conditions (good, marginal, poor) are superimposed over a terrain map. The purpose is to flag environmental constraints. More detailed study is then pursued, as required, at the staff officer level. Understandably, for COMCENTAG's area of responsibility these gross categories of weather condition (good, marginal, poor) are sufficient to flag constraints. Commanders at all levels have to determine the appropriate thresholds that constrain their operations and that force alternative courses of action. Only when the important thresholds and the corresponding alternatives have been established, can this kind of decision assistance be effective. And that is where tailored decision assistance is headed.

Environmental support to USAREUR units is provided by the US Air Force's

Environmental Impacts on Army Electro-Optics Aviation

| Current/Near Term | Programmed | Environmental Sensitivities |
|---|--|---|
| Visual | | |
| 1. Optical Sight (Cobra Attack Helicopter to Track TOW) | 1. Mast Mounted TV Sight System 2. RPV Mounted TV System | Clouds, fog, haze, dust, smoke, snow, rain, light level, sun angle (day-time only, avoid dawn and dusk). |
| Laser | | |
| None | 1. CO ₂ Laser (RPV Mounted) for Range Finding/Designation 2. CO ₂ Laser Designator for: A. Laser Guided Tow B. Hellfire | Clouds (other than very thin), haze, dust, smoke (near IR only), absolute humidity (far and far far IR only). |
| Infrared | | |
| None | 1. FLIR Augmented Cobra Two Sight (FACTS) 2. Mast Mounted Sight System (MMSS) 3. Hellfire Seeker (IRIS) 4. Pilot Night Vision System and TADS Night Sight for AH-1S and AAH | Clouds (other than very thin), haze, dust, smoke (near IR only), absolute humidity (far and far far IR only). |

Figure 3.

7th Weather Squadron, with its headquarters at USAREUR Headquarters in Heidelberg. A breakdown of 7th Weather Squadron (7WS) field units (detachments) and their Army customers follows:

Host Unit

V Corps Units

*V Corps
*3d AD
*8th ID
*11th ACR

VII Corps Units

*VII Corps
*1st ID (FWD)
*1st AD
*3d ID
*2d ACR

Other Units

*2nd AD (FWD)
*Special Forces Det (Airborne), Europe
Army Flight Operations Det (AFOD)
11th Avn Group
7th ATC
70th Trans Bn
USAREUR Tactical Forecast Unit
*USAREUR HQ
59th Ordnance Brigade
SETAF

Weather Team when they deploy from their garrison locations. In addition, the following headquarters elements are supported by personnel from 7WS headquarters during exercises and contingencies:

7th Weather Squadron Unit

OL-A, 7WS, Abrams Bldg, Frankfurt
Det 2, Hanau AAF
Det 12, Finthen AAF
Det 6, Fulda AAF

OL-B, 7WS, Kelly Bks, Stuttgart
OL-E, 7WS, Goepingen AI
Det 5, Ansbach AAF
Det 10, Giebelstadt AAF
Det 1, Feucht AAF

OL-G, 7WS, Garlstedt AI
OL-C, 7WS, Bad Toelz AAF

Det 3, Heidelberg AAF

Det 4, Schwaebisch Hall AAF
Det 7, Grafenwoehr AAF
Det 11, Coleman AAF
Det 14, Campbell Bks, Heidelberg

7th Weather Squadron Hq, Campbell Bks, Heidelberg
OL-D, 7WS, Pirmasens AAF
OL-F, 7WS, Vicenza AI

HQ CENTAG
USAREUR All Source Analysis Center (ASAC)
HQ USAREUR

The ASAC concept recently implemented in USAREUR incorporates

environmental information with intelligence information, integrating all forms of information available and necessary to the decision maker. HQ CENTAG is supported by a Combined Met Cell (CMC) during exercises and contingencies. The CMC consists of US and German meteorologists working in a combined facility and thereby sharing expertise, experience and products.

Among the units listed above is a very unique organization: the USAREUR Tactical Forecast Unit (UTFU). The UTFU's mission is to provide centralized weather support to USAREUR and its subordinate units for training, contingency or wartime purposes. The UTFU provides mission tailored forecasts to 7th Weather Squadron units and designated Army agencies. One of the products that receives the most customer visibility is the Ground Commander's Bulletin, a tailored weather forecast distributed directly to ground commanders.

To insure that the UTFU can continue to provide required support to its customers under all conditions it must be survivable as its supported Army customers. This survivability is maintained through its mobility which is tested several times per year during major Field Training Exercises when the UTFU moves to a field location in expandable vans, but the maximum effort is during the annual REFORGER exercise series. In addition to internal support concepts tested then, augmentees from the CONUS are accepted and utilized. During REFORGER 80, 7th Weather Squadron deployed 23 weather teams totalling more than 100 people who supported the four major exercise scenarios. This resulted in 1,400 man-days spent in tactical support.

When supporting deployed Staff Weather Officers, the UTFU becomes the hub of Army tactical weather communications. Data and products are fed over a teletype circuit to the USAREUR Weather Net Control Station for transmission over an Army operated high frequency radio teletype net, dedicated to weather support. In addition, the UTFU serves as the net control station for a multichannel teletype and facsimile net during major exercises and contingencies.

We have taken a look at a few Army missions which may benefit from tailored decision assistance products. Recall that at the beginning of this article we suggested that weather support is provided in a spectrum ranging from mere information to decision assistance. The classical "stand-up" weather briefing is an adequate means of support to missions requiring only information. This method of weather

lish a particular intelligence mission. A mix of mission-payload capability (one, two, or even three systems on board) versus fuel capacity would allow for mission endurance to vary between 2 to 8 hours.

The UAV picture is not completely rosy. Some IEW systems must know precisely (within meters) where the UAV is located, a difficult achievement but not an impossible one. Also, air space management will become somewhat more diffi-

cult, especially with requirements to loiter UAVs at varying altitudes above the battlefield. There is one question that has not been addressed: Can it survive? That question has not yet been fully explored, but initial indications are that UAVs will be very survivable. Don't be misled, today's weaponry guarantees that any target deemed important enough can be attacked with an intensity and a sophistication which will insure destruction. Individual UAVs may be more vulnerable than

presently believed. A UAV system, however, will be composed of many individual UAVs, and the defeat of the system would require a long, expensive commitment by the enemy.

Development of an IEW UAV system can provide the division with battlefield capabilities that are presently unattainable at any echelon. A glimpse of the intelligence system's future may well be from the wings of an oversized model airplane.



Professional Reader

The Almanac of World Military Power, Fourth Edition, by Colonel (RET) T.N. Dupuy, Colonel (RET) John A. C. Andrews, and Grace P. Hayes. Presidio Press, San Rafael, CA, 1980, \$40.00.

The four patrol boats belonging to the Republic of Maldives aren't likely to create a threat for anyone, yet the island nation is strategically located in the Indian Ocean, and Soviet overtures for basing its "fishing fleet" there were refused.

From the tiny Republic of Maldives to the United States and Soviet Union, **The Almanac of World Military Power** covers them all.

In alphabetical order, each nation's military power and potential are evaluated. The defense structure, politico-military policy, strategic problems, military assistance and alliances all receive written analyses. The subjects of Power Potential Statistics, military personnel, and equipment are broken out by number and type.

While many have a basic knowledge of the world's largest nations, this book will fill many gaps. Nations involved in potential hotspots can easily be found, with a quick summation of their capabilities. Their armed forces are completely listed by type, and major items of equipment are listed by

type and numbers. Maps for all but the smallest nations are also included.

The Almanac of World Military Power is an excellent source book and all intelligence personnel should have access to it.

1LT Raymond W. Levesque
Editor, MI Magazine

On the Banks of the Suez, Avraham (Bren) Adan, Presidio Press, San Rafael, CA, 1980, \$16.95.

On the Banks of the Suez is an Israeli general's personal account of the Yom Kippur War. Although the book is limited to the Sinai, and more specifically the Southern Command, the author makes the reader feel that he witnessed the whole Israeli war effort. The book is an action-by-action account, and sometimes it proves tedious. However, the events are developed enough to make it enjoyable reading.

The author doesn't simply confine his efforts to the tactical arena, but also digresses into his own professional development, and participation in the earlier Israeli wars; the political considerations and problems within the Israeli government and armed forces, especially during the imposition of the cease-fire; and an essay on the

development and tactical use of mechanized infantry within the Israeli Army.

These digressions keep the book from becoming another stale blow-by-blow description of the war. They change the pace and refresh the readers thoughts.

The book is disconcerting in that it seems to be a self-justification, and a personal defense against public opinion, in general, and, specifically, the Agranat Commission of Inquiry. The book gives the impression that this commission caused considerable concern within the Israeli government and defense structure because of Israeli unpreparedness as well as the mistakes made by Israel during the war. The handling of this topic results in an attack on General Sharon's professional conduct during the war, and a justification of the author's actions.

However, it is possible to set the bias aside and enjoy the book. It is very interesting in all of its aspects; as a memoir, a history of the Israeli Armored Corps and the Yom Kippur War, and a study in the political considerations thrust upon a small country as the result of super-power strategy.

On the Banks of the Suez is excellent and is an important addition to a reader's library.

2LT Hoyt Roberson
DTD, USAICS

(Continued on page 59)

OPSEC Considerations and the Weapons System Acquisition Process

by Major Joseph H. Saul

Critical military technologies (CMT) are those technologies in which the United States has a significant lead over the Soviet Union. The strategic importance of CMT enabling the United States to keep or acquire a military advantage over the Soviet Union cannot be over-emphasized. The purpose of this article is to discuss the importance of a DOD-wide policy for the protection of CMT.

While focusing on problems facing the US Army in the area of technology transfer, similar problems confront the Directorate of Defense Research and Engineering (DDR&E), the Defense Advanced Research Projects Agency (DARPA), Air Force and Navy. All of these agencies play a major role in the acquisition of major weapons systems. Operations security (OPSEC) procedures must be incorporated into documents and regulations on DOD research and development (R&D) in order to shield these systems from Soviet exploitation before they reach the military consumer.

Before proceeding we must define OPSEC and the requirements or materiel "need" documents and regulations.

OPSEC is the protection of military operations and activities resulting from the identification and subsequent elimination or control of intelligence indicators susceptible to hostile exploitation. The purpose of OPSEC is to prevent the disclosure of information containing intelligence indicators that can be used to degrade friendly operational effectiveness.

Requirement or materiel "need" documents and regulations give the Army the regulatory authority to acquire new weapons systems. For example, the Mission Element Need Statement (MENS) would be a requirement document, and AR 70-1, Army Research, Development, and Acquisition would be a requirement regulation.

HISTORY OF OPSEC

The Army developed an OPSEC program to support sensitive R&D projects in 1973. Since then, much of the Intel-

ligence and Security Command's (INSCOM) OPSEC support has been directed at the R&D community with emphasis on the support of such US Army Materiel Development and Readiness Command (DARCOM) projects as the improved Hawk, M1 tank, and Hellfire. It is usually too late to protect a new system from hostile intelligence exploitation once development has reached the R&D cycle at the DARCOM project manager stage. Even if it is not too late, it is often very costly to increase the security of a weapon system once security requirements have been written into the contract.

In 1978 INSCOM began a pilot program between the 902D Military Intelligence Group and the Directorates of Combat Developments (DCD) at several US Army Training and Doctrine Command (TRADOC) schools. This pilot program attempted to get all concerned working together at an earlier stage in the weapon system acquisition cycle. The approach was one of partnership. MI personnel are not technically qualified to determine what state-of-the-art technological developments need OPSEC support. However, MI provided threat data to R&D personnel, making it possible to reduce the outflow of CMT.

OPSEC requirements have been written into materiel "need" documents, such as the Letter of Agreement (LOA) and the Required Operational Capability (ROC) document, that are prepared for new weapon systems. Incorporation of OPSEC requirements in these documents will force the R&D community to consider OPSEC during all phases, including developmental and operational testing. This is a good beginning in the Army's effort to stop the drain of CMT.

Now we must outline the goal of OPSEC support programs to the R&D community. That goal is the denial of CMT to the Soviet Union and its satellites so as to prevent their building similar weapons, or countermeasures to defeat our new systems. In our open society all we can do to prevent this is place barriers in their collection path. We can gain vital developmental time by insuring cooperation between the intelligence and R&D communities. We hope the result will be the delivery of a new uncompromised weapon

to the consumer—our soldiers.

On 2 October 1980 the Vice Chief of Staff of the Army issued a memorandum *War on OPSEC*, which requires the Army's R&D community to consider OPSEC. The Vice Chief of Staff tasked R&D to review the complete combat developments/materiel acquisition process in order to incorporate OPSEC. TRADOC was tasked to review all combat development regulations, and the Office of the Deputy Chief of Staff for Research, Development, and Acquisition was tasked to review all materiel acquisition regulations and to incorporate OPSEC requirements.¹ The initiatives of the memorandum, coupled with the OPSEC programs of INSCOM, DARCOM and TRADOC, will go a long way to incorporate OPSEC requirements into acquisition documents and regulations within the Army.

THREAT TO TECHNOLOGY

A large portion of hostile/Soviet intelligence efforts are directed at technological, political, and scientific intelligence. Through these efforts significant CMT is transferred to the Soviet Union. This transfer can occur overtly or covertly. Because of our free press, vast amounts of data published in newspapers, government and trade journals, and contract specifications are readily available to the Soviets. It was estimated at an INSCOM briefing that as much as 95 percent of the intelligence needs of hostile governments can be satisfied through public sources without risk and at minimum expense.²

William H. Webster, Director of the FBI, said before the American Society for Industrial Security in September 1979. "A communist-bloc defector... stated that 'Scientific (and) technical intelligence, to which the communist regimes of the communist-bloc devote extraordinary attention, has become one of the most profitable components of the intelligence apparatus'."³ Another example of the Soviet threat is found in a *U.S. News & World Report* article titled "*Russia's Secret Weapon: U.S. Technology*." The article states: "If they can't but it, they steal it. One way or another, the Soviets are managing to obtain the American know-how and advanced equipment needed by their backward economy and their military

forces".⁴ In a hearing before the Senate's permanent subcommittee on investigation, Senator Henry M. Jackson stated that sales-minded Western capitalists will sell the Soviets the CMT needed by their military forces.

INCORPORATION OF OPSEC CONSIDERATIONS

One major flaw in the Army's OPSEC approach is that, while CMT may be protected by the Army, a similar technology may remain available to Soviet exploitation during R&D phases, within DDR&E and DARPA or within the other military services. A prime example of this inequality was seen in the development of a new tank-round for the Army. The Air Force and Navy had produced rounds using the same state-of-the-art technological applications as the Army, but the rounds were for different purposes. The Army round was SECRET, the Air Force round was unclassified, and the Navy round was CONFIDENTIAL. All three rounds had been developed by the same contractor. The contractor pointed out that if the Army thought its round should be protected at SECRET, then the Air Force and Navy rounds should also have been classified SECRET.

Remember that the goal of OPSEC support programs is to deny CMT to the Soviets and prevent them from building similar weapons or countermeasures to defeat our new systems. The above example must be considered an Army OPSEC failure. The unclassified Air Force round rendered the Army and Navy rounds unclassified because the technology which created all three was similar. Discussion with R&D personnel, during the past seven years that I have been associated with OPSEC and the R&D community, indicates this type of lapse in security is not an isolated case.

Almost everyone agrees that the Army cannot build OPSEC requirements into its materiel "need" documents and regulations, and have an effective program while the rest of

DOD neglects OPSEC considerations. Therefore, the Army is not really protecting CMT and is wasting security dollars. To correct this situation, DOD must incorporate OPSEC considerations/requirements into materiel "need" documents and regulations. Regulations must include such agencies as the Defense Logistics Agency and the Defense Investigative Service (Industrial Security). DOD must take the initiative and direct OPSEC requirements from the top down instead of letting OPSEC percolate from the bottom up, via the Army. Only in this manner can OPSEC impede the transfer of CMT to the Soviet Union.

DOD must also direct how and where OPSEC support programs will be applied. It is absolutely necessary to use OPSEC support wisely because of limited assets and security dollars. To direct this support effectively, DOD must first identify what are the US CMT. This will be the most difficult aspect of getting a DOD-directed OPSEC program going. DOD directives must insure that subordinate DOD elements uniformly apply OPSEC considerations and requirements throughout their materiel "need" documents and regulations.

Once DOD has implemented directives forcing all DOD elements into an OPSEC program for CMT, the following scenario should be implemented to improve OPSEC support. All participants from both government and industry should be brought together when a new weapon system is being developed involving a CMT. Participants could include scientists and engineers, project manager personnel, OPSEC support and Soviet threat specialists, industrial security and contract specialists, and industrial production specialists. The initial meetings main purpose could be to give an OPSEC threat briefing to all personnel so they will understand how the Soviet Union obtains our CMT, and in many cases build and field weapon systems still on our drawing boards. At the close of the meeting each representative might be asked to review his portion of the weapons acquisition process and determine what CMT must be protected to prevent the Soviets from obtaining enough data to reverse-engineer the system or build a counter-measure.

A second meeting could be held to make a final determination as to which portions of the CMT must be protected.

This could assist in making OPSEC support more economical. It may be decided that x, y, and z aspects of a new system must be protected. OPSEC support personnel working with industrial security, project managers

and contractors then determine the OPSEC measures necessary to protect the CMT.

At this point, production specialists from industry have an important role. Their expertise could save security dollars. A new anti-tank missile may cost \$300 and security requirements may add \$150 to the cost. An industrial production specialist, who knows the cost-effect of each portion of an OPSEC requirement, may determine that if only 90 percent of the OPSEC requirements are met, OPSEC costs may be reduced from \$150 to \$30. When this type of interaction takes place between government and industry, it enables DOD to have a cost-effective OPSEC program and prevent the transfer of CMT.

CONCLUSIONS

DOD must stop the Soviets from applying the best of US technology in Soviet military R&D programs. This is difficult because of an extensive Soviet intelligence collection effort that, when combined with an open US society, makes it difficult to stop the out flow of CMT. The Army's OPSEC program backed up with a recent initiative by the Vice Chief of Staff to use OPSEC in R&D, is a positive step in stopping the flow of CMT to the Soviet Union. The next step is up to DOD, which must implement a common OPSEC policy throughout all its elements. This policy must standardize OPSEC considerations in all R&D materiel "need" documents and regulations.

DOD may want to consider a further step for protection of CMT once it has implemented a common policy. The next logical step would be to allocate a percentage of a new weapon system's budget to the protection of CMT. In this way the budget process would formalize OPSEC support to CMT.

FOOTNOTES

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3. Webster, William H., "Remarks by William Webster, Director, Federal Bureau of Investigation, before the American Society for Industrial Security," 17 September. Speech, p. 8.
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Retirement Physicals

Medical examinations for the purpose of retirement are no longer voluntary according to interim change No. 2 to AR 40-501.

Army policy now requires all active-duty soldiers, National Guard, and Army reservists, retiring after 20 years service, to undergo a medical examination. examinations must be scheduled not earlier than four months nor later than one month before the date of retirement

MILITARY INTELLIGENCE

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Lasers on Tomorrow's Battlefield

by CPT Jack B. Keller, Jr.,
USAR

When the beam struck my eye, I heard a distinct popping sound caused by a laser-induced explosion at the back of my eyeball.

*Dr. C. David Decker
Laser Focus, Aug. 77*

Light Amplification by Stimulated Emission of Radiation (laser) is a relatively new physical phenomenon dating back to 1960, when Theodore H. Maiman of Hughes Research Laboratories obtained the first laser action in a ruby crystal. Pioneer work with lasers was conducted in both the United States and the Soviet Union, and in 1964 the Nobel Prize for Physics was shared by scientists from both countries.

Since then several hundred types and kinds of lasers have been developed with hundreds of applications. The unique qualities of laser radiation have been applied to biology and medicine, to metallurgy and

metal working, to data transmission and storage, to survey alignment and rangefinding, to gyro systems and ballistic guidance, to optical scanning and spectroanalysis, and the list goes on and on.

As basic research advances the technology, technology advances the areas of application. And, as applications are engineered to fulfill military requirements, the proliferation of lasers on tomorrow's battlefield is advanced. The laser weapon, if not yet a fielded reality, can only lie around the corner from the present moment.

My vision was obscured almost immediately by streams of blood floating in the vitreous humor. It was like viewing the world through a round fish-bowl full of glycerol into which a quart of blood and a handful of black pepper have been partially mixed.

Decker

There was local pain within a few minutes of the accident, but it did not become excruciating.

Decker

The biological effects of laser radiation on humans are caused by the infrared, visible and/or ultraviolet radiation which is absorbed by the affected individual through direct or reflected transmission. The organs most at risk are the eyes and skin. The primary mechanism for damage is thermal, and the extent of the hazard depends upon the amount of radiation absorbed and the manner in which the affected tissue dissipates the heat. High-intensity beams may also generate acoustic-mechanical shock waves, harmonic oscillations and resonance interference.

The primary effect of laser radiation on the skin is burns, ranging in severity from a mild reddening to charring. Clothing, however, can also absorb the radiation and burst into flame, thereby compounding the nature of the injury.

Laser radiation to the eye presents other problems, foremost being that the eye is much more sensitive to light than the skin. The first two letters of the laser acronym stand for *light* amplification, and the intensity of such amplification has been vividly illustrated by the US Army Environmental Hygiene Agency; the beam emitted by the laser rangefinder on the M60A3 tank appears 100 million times brighter to the eye than does the standard

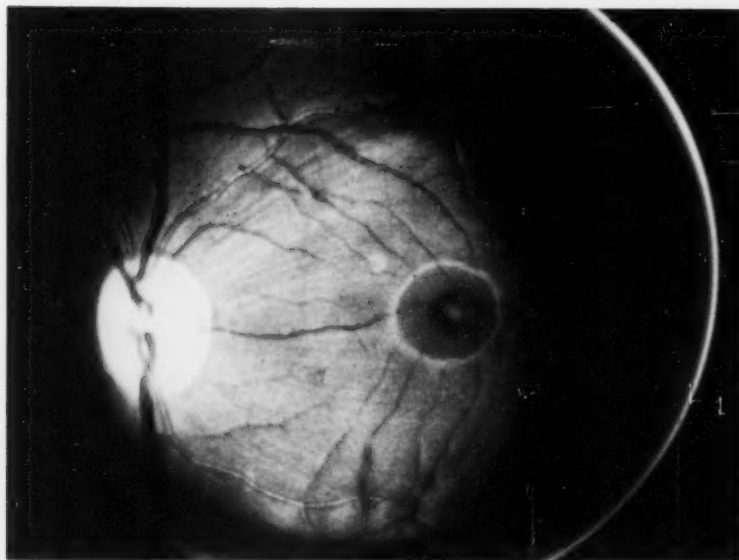


Figure 1.

◀ Retinal lesion in fovea of a rhesus monkey produced by a ruby laser. Bright spot on left is optic nerve; dark area to right-of-center is fovea; lesion is clearly detectable in fovea.

searchlight mounted on the same tank.¹ Such intensity, even from a relatively low energy laser as the M60A3's rangefinder, can produce injury to the eye through thermal, photochemical and shock wave action. The degree of damage can range from a "dazzle" effect with short-lived after images to permanent blindness. In addition to the physiological effects, there is also a probability that an eye injury will induce psychological trauma as a by-product.

The most immediate response after such an accident is horror. As a Vietnam War Veteran, I have seen several terrible scenes of human carnage, but none affected me more than viewing the world through my bloodfilled eyeball. In the aftermath of the accident, I went into shock, as is typical in personal injury accidents.

Decker

Laser radiation in the ultraviolet portions of the spectrum poses an additional hazard because injury is not immediately perceived at lower energy levels. In much the same way as a sunburn is not painful while the sun is producing the burn, ultraviolet laser radiation causes injury that is later perceived. One could be exposed to such radiation repeatedly over a short period of time without being immediately aware that the eye was being injured.

The effects produced by near-infrared and visible light laser radiation are practically instantaneous. The beam will be refracted and focused back to the retina—the sensory membrane that lines the eye, receives the image formed by the lens, and is the immediate instrument of vision. This radiation will produce lesions and possibly hemorrhages when impacting on the retina. If the beam strikes the fovea—the area of central vision and best color perception—it will produce one or more blind spots which essentially destroy some or all of the

center of one's field of vision. In the worst case, the beam can strike the optic nerve and cause total blindness in the affected eye(s). The hazard is greatest if the eye looks directly into the beam, but severe damage can result from reflected radiation as well, as demonstrated in the case of Dr. C. David Decker.²

The hazards described above pertain to the unaided eye, and are magnified considerably if the laser beam is viewed through a magnifying optical device such as a pair of binoculars or a TOW tracking sight. For example, an observer using a pair of "7X" binoculars will receive a radiation level 49 times as great as an observer using the unaided eye.³ Further, the nominal ocular hazard distance of laser radiation is significantly increased with the use of magnifying optics. The minimum safe distance for viewing a laser rangefinder mounted on the M60A3 tank is roughly 10 kilometers for the unaided eye; using "13X" optics, the danger area is extended to about 80 kilometers.⁴

Such hazards on tomorrow's battlefield cannot be dismissed simply because we may want to dismiss them. The age of laser proliferation began over 20 years ago and is continuing as you read this article. Laser rangefinders, designators, illuminators, and communication and navigation devices are a reality, and they are only low-energy lasers (LEL). As great a hazard as they pose to the eye, they pale when compared to the potential of high-energy lasers (HEL) employed as system countermeasures or as weapons.

The US is already using laser-equipped radar to track Russian spacecraft, and there is strong evidence—despite official US denials—that the Soviets used

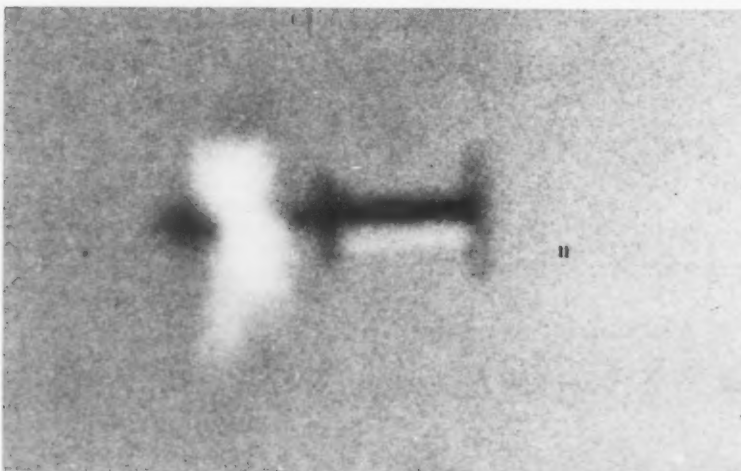


Figure 2.

▲ A Navy/TRW deuterium-fluoride HEL attacks a TOW antitank missile in flight during 1978 tests at San Juan Capistrano, CA. (US Navy Photo)

Despite this successful 1978 Navy/TRW test of a laser system, the Air Force was unable to destroy a 2,000 mph Sidewinder missile in flight, last June, from an airborne KC-135 aircraft armed with an experimental HEL. (US Navy Photo)



Figure 3.

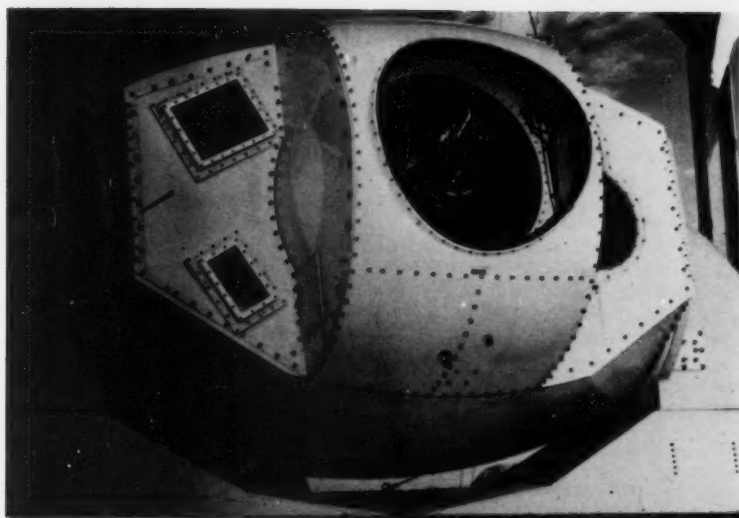


Figure 4.

lasers last year to temporarily blind the American early-warning satellites. Defense Secretary Donald Rumsfeld said the US satellites had probably been dazzled by the glare of natural-gas fires along a pipeline in Western Russia Pentagon skeptics point out that blinding episodes occurred over a period of three months and that one of them lasted for four hours. The radiation was between ten and 10,000 times as strong as any natural blaze, and other defense satellites failed to see the alleged "fires."

Newsweek, 1976⁵

The effects of laser radiation on electro-optical devices are fairly well known; it is potentially viable as an effective countermeasure. Thus, a HEL can indeed do what *Newsweek* suggested the Soviets were doing as early as 1975. Even a LEL can blind or otherwise degrade electro-optical devices at close range, but it would require a HEL to penetrate the earth's dense atmosphere and attack an orbiting spacecraft.

If the Soviets did or can do what *Newsweek* suggested, then one must at least recognize the implications of such a potential. America's early-warning satellites are in orbit for one reason—to detect Soviet ICBMs at lift-off and allow our strategic forces the time required to launch a retaliatory counterstrike. If the satellites can be blinded from earth for only 20 minutes, then a massive ICBM strike could possibly go undetected until it was too late to launch an effective counterstrike. Such a potential would effectively ne-

gate the retaliatory cornerstone of our defense policy and render the US vulnerable to a preemptive nuclear attack.

One must not assume, however, that tomorrow's war will open with a massive ICBM attack. When examining the prevailing winds in the Northern hemisphere, one realizes that such a scenario could prove ultimately disastrous to all who inhabit the regions north of the equator. Therefore, it is the conventional land, sea and air wars which occupy most of the attention of our defense planners, and in all three dimensions one finds the ever-present laser.

The laser as a countermeasure can assume many forms, although it is generally thought of as attacking electro-optics or the more vulnerable human eye. But, as revealed in *Aviation Week and Space Technology*, it can also be employed to counter a missile and thereby—as in the case of an anti-missile missile—assume the characteristics of a weapon.

Two Hughes wire-guided TOW antitank missiles [were] destroyed in flight by the Navy/TRW deuterium-fluoride high energy laser experimental system tests [in 1978] at San Juan Capistrano, Calif.

The experiments were to determine the accuracy, not the lethality, of the Hughes pointer/tracker system (see figure 7), not a 400-kw output laser. The Navy was able, however, to destroy four out of four TOW missiles ... in tests to demonstrate the accuracy of holding the beam on the highly dynamic small target.⁶

Although technically a countermeasure device, most people would characterize the system described above as a

weapon. Such a system, however, is only in the RDT&E stages of development and is not yet a fielded reality—or is it? Could the Soviet HEL alluded to in *Newsweek*, if it exists at all, be an actual antisatellite weapon operated at reduced power output to function in an electro-optic countermeasure role rather than an all-out destructive one? Could a ground-based antisatellite HEL weapon also be used in an anti-aircraft role? Are the science fiction weapons we saw in *Star Wars* and *The Empire Strikes Back* really science fiction after all, or are they actually within our grasp within the near-term? If not, then why has *Aviation Week and Space Technology* dedicated more than 80 pages to this very subject within the past 16 months? And what would it mean for us if the Soviets fielded them first?

Major General George J. Keegan, former Director of Air Force Intelligence, has suggested that the Soviets may indeed field them first. Upon his retirement, he revealed the existence of a device under construction at Saryshagan, USSR, which he assessed to be a particle-beam generator. The assessment was disputed, but the suggestion remains, that a Soviet program exists and may be in advanced stages.

From a variety of sources, the US has discovered a massive Soviet effort to develop and deploy directed-energy weapons—both high-energy lasers and charged-particle beams. There is evidence the Soviets already may have issued orders to design bureaus to begin prototyping the electron-beam device [being constructed] at Saryshagan.⁷

An extremely large, ground-mounted and fixed device—whether it be an anti-aircraft, antiballistic missile or anti-satellite weapon—is one thing, but small, highly mobile and powerful lasers would be quite another. Such a device would be suitable for attacking soft targets, including personnel. Given Soviet doctrine and its penchant for armored vehicles, one would expect them to house such a device in an armored vehicle if they developed one at all.

A Fabulous Intelligence Collection System: The Individual Soldier

by COL Andrew M. Rutherford,
USA, Ret.

Korean War. A platoon leader intently studies recent aerial photos of the area in front of his positions, noting telltale signs of broken grass indicating a trail used by the enemy to approach friendly lines in a penetration attempt or nighttime reconnaissance. A small daytime reconnaissance patrol, in place during the night, detects recent enemy occupation of a large, dry irrigation canal. Discussions with the company commander, the battalion S2 and S3 result in an order for an ambush operation on the irrigation canal based on the intelligence revealed by the aerial photography and the patrol. After a day's rehearsal in the regimental reserve area, the ambush is set for the following night. Nothing happens. On the third night, however, an enemy recon patrol triggers the ambush and is eliminated, yielding several POWs who are interrogated for further information. That sector is free of enemy activity for the next month.

Vietnam War. An advisor to an ARVN infantry regiment is told by a Vietnamese soldier that the Vietcong is using boats to move men and supplies along a tributary to the Vam Co Dong River, not far from Saigon. Asked how he knew this, the soldier indicates that his family lives in a village along this smaller river and observes the enemy activity which occurs almost nightly. The advisor suggests that the regimental commander order a night ambush along the river using the regimental recon platoon. The advisor will accompany the platoon. In due course, the operation is formulated. Just after nightfall, the platoon moves to selected positions along one side of the river, which was about 50 feet wide. Around 2200 hours, the first sanpan comes into view, fairly easy to see as the moon is out. The soldiers tense, moving their rifles into firing position. When the advisor sees that the convoy of six sanpans is in range, he suggests to the platoon commander that the soldiers open fire. A hail of bullets strikes the boats and the enemy, destroying all. The platoon quietly leaves the area and moves swiftly back to the regimental area, elated by the success of their first night action. Good intelligence, coupled with a quickly implemented operation, had resulted in a significant enemy defeat.

Enemy activity falls to almost zero for the next month.

One night the air base at Bien Hoa is struck by a flurry of 152mm rockets causing considerable damage. The following day, calculations based on crater analysis indicate the probable location of the firing areas and three are confirmed by evidence found by an infantry patrol. The positions are plotted for ready reference by ARVN artillery in the vicinity. During the next rocket attack on the air base, the pre-plotted areas are immediately shelled. A ground patrol finds a dozen rockets and numerous blood stains in one of the locations that was shelled.

A Popular Force (local militia) village outpost, near the town of Duc Hue (Hau Nghia Province, III Corps), is attacked by an enemy company, supported by mortars, starting at 0200. The fight ends in stalemate at daylight with friendly and enemy troops each holding a portion of the triangular shaped fort. The enemy withdraws at dawn, knowing that major ARVN elements would be on their way to rescue the outpost garrison. The US Special Forces B Team at nearby Duc Hue had other ideas. Using their Civilian Irregular Defense Groups (CIDGs) and Vietnamese Special Force personnel, they swing past the outpost in pursuit of the enemy. Using tracking techniques they remain on the trail, catching up by noon. The ensuing fire fight, while yielding few enemy casualties, does cause the enemy to abandon their mortars and other equipment as they move for the Cambodian border. Such a determined and swift pursuit had previously not occurred in the province and proved a demoralizing shock to the enemy. The Special Forces task group had made excellent use of intelligence gleaned from the outpost personnel, villagers, their own informants and, of course, tracking techniques. Prior to the pursuit operation, it had learned of the enemy beginning strength, rally area, direction of retreat and probable base area in Cambodia. Tracking signs indicated finite direction, number of troops, how many wounded were being carried and how fast the enemy was moving.

Lessons to be Learned

By and large, all of the measures mentioned above can be learned and used by the individual soldier. One crit-

ical aspect of intelligence collection is the importance of paying attention to one's surroundings and recognizing anomalies. Especially valuable information can be obtained from the local population, even if it is hostile. In this respect, knowledge of the language is a great assist. It amazes me how quickly soldiers are able to acquire a working vocabulary. Don't put this informal interface down! It can lead to a gold mine of information.

In Europe in 1979, two US mechanized divisions were in the field testing, among other things, a series of new electronic intelligence acquisition systems, data links, and computer storage, analysis and control. This was all within one division. The other had the available intelligence assets. After the exercise, which was an electronic fiasco for the one division, it was found that the one best source of intelligence was the division long range reconnaissance patrols (LRRP) which produced 90 percent of behind the Forward Edge of the Battle Area (FEBA) targets. I am not extolling the excellence of the LRRP concept per se, but although an organized team may be equipped with various aids, the members are individual soldiers, specially trained in the personal intelligence acquisition measures I am writing about. They use the finely honed techniques every soldier can and should use to acquire significant information. I might add that when I was with G2 VII Corps in the early 1960s, we placed great reliance on our organic LRRP company.

What are we really talking about? What are these skills and what is their scope? I am sure that all of us at one time or another have considered this, especially in relation to a Skill Qualification Test (SQT). The list is truly remarkable when the applicable skills are enumerated.

- POW and document handling/processing
- Enemy order of battle (at least a rudimentary knowledge).
- Knowledge of the enemy.
- Vehicle and aircraft identification (friendly and enemy).
- Enemy equipment knowledge.
- Reconnaissance patrolling techniques.
- Operations Security (OPSEC) measures include battlefield police, security awareness, use of codes, radio procedures, use of camouflage.

- Signal Security (SIGSEC) measures to include such measures that the enemy utilizes.
- Personnel Security (PERSEC) procedures involve not only a knowledge of Army requirements, but an ability to spot anomalies and what to do once they have been spotted.
- Spot reports are an important tool for getting front line information, in a brief, uniform and easy to understand format up the chain to the analysts and decision makers.
- Searching abandoned battlefields, or any area where the enemy has been, for documents, equipment and other items of intelligence interest. A German soldier, searching a British glider that had crashed during World War II, found a briefcase on a dead staff officer which contained complete plans of the operation. These were immediately taken to the German Army Commander (fortunately for the Allies, he thought it was a plant).
- Challenge, authentication, encode and decode.
- Recognizing jamming, making out MI/JI (meaconing, interference, jamming and intrusion) Report. Radio procedures in an EW environment.
- Knowledge of capabilities of and how

to use ground surveillance devices and the various types of sensors.

- Terrain awareness.
- Crater analysis.
- Observation techniques.
- Tracking ability.
- Target location through various methods such as flash and sound ranging.
- Map reading.
- Use of overlays.
- Knowledge of area, people, customs, language.
- Identification of odors.
- Sound identification.
- Knowledge of flora and fauna and relationship to soil type.
- Knowledge of enemy habits and tactics.

As can be seen, these skills involve what we commonly know as counter-intelligence, as well as intelligence skills. The ability to screen our activities from the enemy is of almost equal importance to our acquisition of EEI (essential elements of information).

It is glaringly evident that our **prime** information/intelligence source is personnel of every stripe, but predominately front line, aviation and forward of the line personnel. As an instance, I was leading a patrol behind Chinese

lines in the Kumwah Valley. It was daylight and we were laying low, strictly observing. We were situated near a large hill mass called Papasan (Hill 1062) which was crawling with Chinese well dug into the ground in tunnels and deep trenches. Soon I saw the muzzle smoke of three 120mm mortars being fired from deep pits on the reverse slope of a ridge on an upper reach of the valley, about 100 feet from the top of the ridge. Cave entrances were right in front of the mortars. After each fire mission the crew would carry their weapon into the caves.

After returning from the patrol, I plotted the mortar positions on a map for the battalion S2 and explained to him how the battery had to be attacked. Fire from our side of the FEBA could not touch the position. The next day an air strike hit the area from the north. All of the caves were sealed.

Before this important and prolific source may be exploited it must be thoroughly trained. The intelligence community must not only train itself, it must make every effort to insure that all combat personnel become intelligence "experts" in their own right.

Computer Security

by 2LT Sharon M. Cain

The Army is becoming increasingly dependent on computers for both support and tactical functions. Last year, the 101st Airborne Division (Air Assault) and Fort Campbell had two complete, self-contained computer facilities; by the end of 1981 the installation will have at least five. In addition to these facilities, the post has numerous minicomputers, microprocessors and word processors. Inherent in the rapidly growing use of computers by the military is the problem of computer security. The information being processed must be protected, and just as important, the computer system must remain operational. Computer security encompasses a wide range of security considerations: electromagnetic emanations, communication, software, hardware, procedural, and physical and personnel security. All areas must be consolidated into a well-rounded automation security program.

The Army-wide challenge has been to educate managers and other personnel working in Automated Data processing (ADP) facilities in automated security. The Assistant Chief of Staff, G2, placed an officer with an ADP and security background in the full-time job of monitoring computer security for the

101st Airborne Division (AASLT) and the installation. This officer reviews and evaluates requests for accreditation of ADP facilities; ensures that managers of ADP facilities have considered all aspects of security; makes recommendations concerning the need for additional security measures; and provides advice and assistance on administrative requirements pertaining to automation security. Because of this system, computer security at Fort Campbell has been enhanced in the following ways:

1. ADP facility commanders/managers have a knowledgeable point of contact concerning security matters.
2. Requests for accreditation are professionally reviewed and evaluated prior to accreditation.
3. The G2, as the Automated Systems Security Manager for the Division and Post, has a knowledgeable and qualified staff member to inform him on computer security matters.
4. All word processors at Fort Campbell have been evaluated and those requiring accreditation have been accredited.

5. An unclassified Fort Campbell regulation concerning the security of word processors has been published.
6. A risk assessment has been conducted for each Data Processing Activity (DPA) at Fort Campbell; all eight sensitive activities have been accredited.
7. A well-rounded computer security program is being established.
8. The action officer is able to monitor the procurement of ADP equipment by units/activities of this command and ensure that the necessary measures are being taken to protect the information processed on the computers as well as the computer facilities.

A good computer security program does **cost**: it takes an officer from an already critically short human resource pool. Benefits are found, however, in having a full-time monitor of all ADP facilities. This approach has strengthened Fort Campbell's computer security program and continuing benefits are expected at the Screaming Eagle installation.

Heavy Support for the Meeting Engagement

by CPT Steven A. Frith

Any Soviet drive toward the Rhine would be extremely fluid and would develop unevenly along the front. Emphasis would be placed on the rapid concentration, and then dispersal, of battalion and regimental sized forces.¹ Major General Lobachev, commander of the Taman Guards Motorized Rifle Division, stated that the pace of the advance is crucial and that the faster the advance, the more the enemy will be thrown off balance, losing his freedom of maneuver and his ability to deploy troops and weapons.²

Greater mobility and firepower on the modern battlefield increases the probability of meeting engagements which will therefore be the Red Army's most common offensive operation.³ In his book, *Tactics*, General Reznichenko argues that the meeting engagement will be characteristic of all phases of the battle. The meeting engagement can be expected during the movement to contact, the exploitation phase of the offensive and even in conjunction with counterattacks from the defense. In short, the meeting engagement can be expected at almost anytime including the "break-through" phase of the offensive.⁴

Although there can be no question of the dominant role of the meeting engagement in Soviet tactical doctrine, there has been considerable debate in the Soviet Army about its viability. The 1973 Yom Kippur War with its massive use of antitank guided missiles (ATGMs) and other precision-guided munitions shocked the Soviets and raised some serious questions about the vulnerability of a high-speed mounted offensive. The ease with which few infantrymen armed with ATGMs destroyed tanks, while remaining safely outside the range of the tanks' armament, is a lesson that was not lost to the Soviets.⁵

The Red Army recognizes that the

meeting engagement cannot succeed without the rapid and decisive attainment of fire superiority. Highly responsive artillery and close air support will be used as combat-power multipliers to suppress the enemy's direct fire weapons and gain fire superiority. The Soviets believe that 40 to 60 percent of the enemy's weapons must be suppressed during the initial phases of the meeting engagement if the maneuver forces are to seize the initiative.⁶

The Red Army recognizes that the meeting engagement cannot succeed without the rapid and decisive attainment of fire superiority. Highly responsive artillery and close air support will be used as combat-power multipliers to suppress the enemy's direct fire weapons and gain fire superiority.

Suppression of enemy forces during slow moving or static operations presents few problems since there is time for intensive planning and preparatory fires. Time, on the other hand, is a critical factor in the meeting engagement since as A. I. Radzievsky has observed:

The meeting engagement will be won by the side that most quickly is able to deploy its forces and combat means and has achieved surprise, using blows in comparatively weak sectors of the enemy.⁷

The major problem involved in providing effective suppressive fire during the meeting engagement is the increasing speed of battle. The time interval between the initial con-

tact by the advance guard and the closing to within 400 meters of the enemy is often not long enough for conventional towed artillery to deploy and neutralize the enemy's defense.⁸ The key to success in a meeting engagement is highly responsive fire and close air support.

During the last decade, a near revolution in Soviet attack helicopter and self-propelled artillery doctrine and technology has had a profound impact on Soviet offensive doctrine.

LTC (Ret.) William Bater, an expert on Soviet artillery, noted that the Red Army is now emphasizing the "psychological effect" of artillery in confusing and disorienting the enemy over that of its destructive effects.⁹ Control of field artillery will be decentralized during the meeting engagement, and a self-propelled 122mm howitzer battalion will generally be attached to the advance guard.¹⁰ Along with conventional indirect fire missions, the accompanying artillery is responsible for providing direct fire against tanks, ATGMs, and hastily employed troops.¹¹

Self-propelled artillery accompanying the advance guard could be expected to engage the enemy within two minutes of contact, and then continue a series of barrages set to the tempo of the attacking forces.¹² These barrages would concentrate on the suppression rather than destruction of NATO defenses. For example, the Soviets estimate that after the lifting of the barrage it would take a rifleman 45 seconds and an ATGM crew one to 1.2 minutes to resume action.¹³

The 122mm self-propelled howitzer M-1974 was specifically designed to support the high speed offensive, and is the artillery system most likely to be encountered during the meeting engagement. The SP M-1974 is found in the artillery battalion of BMP-equipped regiments in both motorized rifle and tank div-

isions. It has a maximum range of 15,300 meters (21,900 meters with rocket-assisted projectiles) and is used extensively in a direct fire role against armored vehicles or to breach minefields. The M-1974 is an amphibious PT-76 chassis with a 122mm howitzer mounted in a fully enclosed turret. The vehicle is relatively light which gives it excellent cross-country mobility. The tightly-sealed hull and its over-pressure filtration system enables the M-1974 to operate in a nuclear, biological and chemical (NBC) environment with

Soviet doctrine emphasizes the importance of close coordination between air and ground forces during the conduct of an attack. Unfortunately, responsive close air support has often fallen victim to overcontrol of assets by Frontal Aviation and an excessive dependence on preplanned strike missions.

minimal degradation of crew performance. The sustained rate of fire is five rounds per minute.

Soviet doctrine emphasizes the importance of close coordination between air and ground forces during the conduct of an attack. Unfortunately, responsive close air support has often fallen victim to overcontrol of assets by Frontal Aviation and an excessive dependence on preplanned strike missions.¹⁴ However, the Soviets are taking action to improve the timeliness and effectiveness of their close air support by assigning aviation representatives down to division level.¹⁵ The aviation representatives at division are equipped with armored vehicles and special communications equipment that allow them to direct air strikes from the first echelon of the attacking forces.¹⁶

A more responsive and flexible employment doctrine for attack helicopters has evolved out of the Soviet's recognition of the unique relationship that helicopters and ground forces share. Soviet Air Force General M. P. Odintsov has observed that the task of the helicopters and artillery is to strike on the FEBA, thus releasing high performance aircraft for deep interdiction.¹⁷ There is growing evidence to suggest that control of attack helicopters would be decentralized to

such an extent that during the attack they would be operating in direct support, or in fluid situations they could even be employed under the operational control, of the combined arms command.¹⁸

The Soviets believe that attack helicopters can be used effectively in the offense by operating under the covering fire of artillery and ground troops. In addition to the standard western helicopter missions that call for attack helicopters to secure flanks, provide close air support, and act as a mobile anti-tank reserve, we can also expect Soviet attack helicopters initiating and supporting meeting engagements well-forward of the FEBA.¹⁹

The HIND is one of the most technically advanced helicopters in the world and has the capability to fight and survive forward of the FEBA. It is heavily armored with bullet-proof windshields and extensive structural hardening. The HIND's armament package gives the crew flexibility in mission tailoring weapon loads. Wing armament can include up to four 57mm rocket pods (a total of 128 free flight rockets) and four anti-tank guided missiles. In addition, the crew has the option of substituting general and multi-purpose bombs for the rocket pods.²⁰ The most advanced version of the HIND, the E model, is equipped with the AT-6 Spiral antitank guided missiles and is currently being fielded in Group of Soviet Forces Germany.²¹ The HIND also mounts a four-barrelled 12.7mm gatling gun in the nose turret.

A technologically advanced all-weather and low light fire control system has been integrated into the HIND E's armament system. The crew can identify and engage targets using electro-optical sensors and a probable laser range finder, coupled to forward looking infrared (FLIR) and/or low light television (LLTV) sensors positioned in the HIND's chin turret.²² With this advanced fire control system the HIND can continue to support the attack during day, night, or even in fog; a vital capability for operations in Central Europe.

Conclusion

To win the first battle we must confront the threat squarely. The Soviets are aware of the high speed offensive's vulnerability to our active defense and have taken steps to minimize that vulnerability. Effective intelligence planning for the meeting engagement must concentrate on

denial of targeting information to the enemy prior to contact, and the surgical removal of the advance guard's fire and close air support control systems during contact. The last decade has seen a revolution in Soviet attack helicopter and self-propelled artillery employment doctrine and technology that must be planned for now rather than after the first battle.

To win the first battle we must confront the threat squarely. The Soviets are aware of the high speed offensive's vulnerability to our active defense and have taken steps to minimize that vulnerability. Effective intelligence planning for the meeting engagement must concentrate on denial of targeting information to the enemy prior to contact, and the surgical removal of the advance guard's fire and close air support control systems during contact.

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Intelligence Training for Maneuver Units

by MAJ V. Paul Baerman

The S2 in maneuver units often feels like "a voice crying out in the wilderness." The myriad tasks for which maneuver battalions are responsible frequently mean that intelligence training gets short shrift. How does an S2 make his point and assert himself in the training program? This article is intended to aid the S2 in the accomplishment of those individual and collective training tasks critical to the success of an Army Training and Evaluation Program (ARTEP) mission or Skill Qualification Test (SQT).

Intelligence Training Ideas

Training Kits. The intelligence training kit is easy to fabricate and use as a principal aid to intelligence training or concurrently with other training. Depending on perceived training shortcomings, the kit(s) can be equipped to handle armored vehicle registration, Survival, Escape, Resistance and Evasion (SERE), POW handling, spot-reporting, map-reading, etc. These kits can range in size from an ammo can to a footlocker but must contain all the necessary training aids and lesson plans required to set up and conduct the training with a minimum of preparation. The kits could contain scorecards for training assessment and record-keeping purposes. Sustainment training of SQT skills, concurrent training and inclement weather training could all be conducted on short notice and fill in the "slack" periods found in any given day.

Specialization. The implementation of specialization can force intelligence training through peer instruction. For instance, a maneuver unit could designate one squad to be the POW-handling squad with dual responsibilities—first, to handle POWs and second (perhaps more important), to train other members of the unit in the correct procedures for handling POWs. This same

technique will work on even a smaller scale. Designate a soldier within a squad to become the armored vehicle recognition expert. Base such designations on the soldier's interests (perhaps he is a model-maker). Have him prepare a five to 10-minute class for his peers on the main NATO/Warsaw Pact combat vehicles. Using photographs or recognition cards that could fit into his pocket or ammo pouch, the soldier can brush up on them any time during the day.

Economy of Scale. There are techniques that can be effective in presenting mandatory classes—intelligence classes often fall into the 100 percent attendance category. Two techniques in particular suggest themselves to the achievement of both quality classes and high attendance. First, hold the classes at the highest practical level suited to your needs, say, battalion. Have the intelligence-related classes coordinated by the S2 and hold them periodically (every two or three months), requiring attendance of new arrivals or personnel requiring refresher training only. Company-level trainers need not be plagued by a variety of specialized classes nor will the S2 be forced to give classes for which he is not fully prepared. With this new schedule the S2 can concentrate on improving the quality of training. Second, as many classes as possible should be video-taped (and updated as necessary) so personnel who missed them (or all unit personnel in preparation for deployment) can watch them on unit playback machines.

Concurrent Training. One of the sore points with young lieutenants running ranges is figuring out what to do for "concurrent training." In this area, the S2 can really do the unit and intelligence training a service. Using one of the kits described above, a display of Opposing Forces (OPFOR) equipment or, better yet, by firing enemy weapons or your own weapons at enemy pop-up

targets, the S2 can provide the concurrent training and keep everyone happy. COMSEC and OPSEC training will also lend themselves to this type of instruction.

The S2 can perform the same service where maneuver units spend much of their time: the motor parks. A number of methods are appropriate for providing intelligence training to the troops. Obviously, posters with Soviet Military Liaison Mission (SMLM) and Subversion and Espionage Directed against the Army (SAEDA) warnings are available for display in unit motor shops. Displays of enemy equipment, scale models, real soldiers in enemy uniform, among others, would be much more effective while maintenance is taking place. Troops maintaining their equipment could be rotated through the displays or instruction in small groups. One-half or one-quarter scale plywood cut-outs of enemy armored vehicles bolted to the motor park fence or motor shop buildings will improve vehicle recognition and aid in crew drill. The S2 could operate a radio net to test radios and proper radio procedures. The better the quality of effort put forth in these special displays/classes, the more troops will wander over to see what the crazy S2 is up to now!

FTX/CPX. The S2 should be in "on the ground floor" of any Field Training Exercise (FTX) and Command Post Exercise (CPX) planning. Intelligence play should be one of the primary objectives of the exercises. In addition, the S2's early entry into planning may assure the unit that Combat Electronic Warfare Intelligence (CEWI) and OPFOR assets will be dedicated to assist the battalion's training. Those assets will be available only if the S2, working closely with the S3, can give sufficient notice to the CEWI folks.

Conclusion

This article has outlined five ways in which our battalions can become better fighting units. The S2 has a special training responsibility and should leave no stone unturned in his search for ways to be heard.

The Enemy Will Tell Us When

by MAJ Richard Armstrong

Tactical intelligence is not a modern phenomenon. Evidence of its existence can be traced to man's first endeavors at organized tribal warfare. The great battle captains of history strove to outguess or outmaneuver their adversaries by determining as accurately as possible a picture of their capabilities, strengths and intentions. For most of recorded history, intelligence was gathered solely by human intelligence assets and provided information to determine enemy intentions.

To avoid neglecting historical precedents, the modern intelligence officer must ensure that the role of human intelligence (HUMINT) is not neglected for the more technologically-oriented collection methods. In the intelligence estimate, one learns to identify the 'classic' indicators of attack: artillery positions well-forward, massing of tanks and troops and logistical build-up. With these activities, however, one lacks certainty that they are not being manipulated for deception, and these activities cannot specifically identify when the attack will begin.

If these 'classic,' or macro, indicators are not enough for the modern intelligence officer, we must then look to a source that has continued through the ages and still holds contemporary significance. In **The Art of Warfare**, Sun Tzu, a Chinese General around 500 B.C., identifies 'signs of significance' communicating enemy capabilities and intentions as illustrated by the following examples:

If the enemy's troops march up angrily and remain facing yours for a long time without either joining battle or taking themselves off again, the situation is one that demands great vigilance and circumspection. When an army feeds its horses with grain and kills its cattle for food, and when the men do not hang their cooking pots over the

campfires, showing that they will not return to their tents, you may know that they are determined to fight to the death.

When there is much running about it means that the critical moment has come.

When soldiers stand leaning on their spears, they are faint from want of food.

If those who are sent to draw water begin by drinking themselves, their army is suffering from thirst.¹

Sun Tzu's ageless perspective is at the core of human endeavors in warfare. All armies must time their marching and fighting around needs of the soldiers and machines of war. The soldier will always exhibit certain human frailties, i.e., hunger, fear and demoralization. The HUMINT collection of such information is critical in discerning the more specific intentions and capabilities of the enemy.

Since Sun Tzu, immense progress in technology has contributed significantly to intelligence collection. During World War I, the application of technology in the interception of wireless communications and the use of aerial photography was in rudimentary development. Despite the new collection devices, observation and patrolling by front line troops was necessary to identify enemy machine-gun cupolas, dugouts, belts of wire and the enemy trench line.

In the latter part of the Second World War, as cited from Cornelius Ryan's book, **The Last Battle**, the German General of the Army Group Vistula, Colonel General Gotthard Heinrici, was highlighted for his ability to ascertain the exact time of the Russian attacks. He was able to pinpoint the attack to the precise hour, thus enabling him to evacuate the frontline positions prior to massive Soviet artillery preparations and conduct his defense with a greater flexibility.

Almost daily, General Heinrici flew the enemy frontline trace to observe troop activities and artillery deploy-

ments. At night, he studied prisoner of war interrogations and other intelligence reports for clues which would help ascertain time of attack. Heinrici was not fooled by the 'classic' indicators routinely manipulated by the Soviet Army. At one point along the front, the Russians would lay down a short artillery barrage, and in another sector, they would launch limited attacks. For years the Russians had used these same feints and ruses as preludes to the main attack. His concern was when to order his troops back to the second line of defense.

What were the essential elements of information that gave Heinrici a prophetic, almost clairvoyant, estimate of Soviet intentions? He needed intelligence of a greater detail than the placement of artillery well-forward and the assembly of large tank formations, or troop concentrations. He needed confirming information that was not easily manipulated for deception.

Although Cornelius Ryan does not give any specific clarification of Heinrici's secret, David Kahn in **Hitler's Spies** offered insights into specific factors that German military intelligence called "mosaic work." The mosaic work consisted of collating separate and varied intelligence reports into a coherent estimate. German intelligence placed great value on verbal evidence from prisoners of war and radio intercept reports. "But the greatest volume and the most certain information came from the physical observation of the frontline troops."²

The German General Staff Section, Foreign Armies East, developed a pamphlet, **Troop Ic* Service in the East**, which listed some of the observations that would indicate Soviet intentions. Some of these macro-indicators included the probing of German lines by reconnaissance and raiding patrols; increased partisans and spy activities behind the lines, and increased air activity.

¹Author's Note: Ic (One-se) was the German General Staff's intelligence officer designation, analogous to our S2/G2 staff positions.

The place of probable attack was betrayed by increased radio nets, greater depth in troop staging areas and the massing of artillery, tanks and troops. A defensive intention was keyed by the disappearance of known units, deception attacks and a decrease in artillery fire and air activity. Again, many of these macro-indicators lend themselves to use for deception. These macro-indicators could not have been the clues that guided Heinrici to his unerring time predictions.

The Foreign Armies East pamphlet notes that the Soviets displayed human tendencies, micro-indicators, which were as discernable as those given to us by Sun Tzu. Some of these 'signs of significance' for German military intelligence and General Heinrici were:

The narrowing of unit frontages for attack could be determined by observation of reliefs and changing sentry routes.

If Russian intentions were to attack, the soldiers wore helmets, if defensive, they wore caps.

Intentions of attack noted by nervous behavior of soldiers with movement across areas under fire, indicating new arrivals.

Prior to any significant marshalling of troops there were changes in mess and guard hours.

New racial faces and languages in frontline troops indicated new arrivals.

The issuance of liquor prior to the attack.³

This information was collected only by the frontline troops in contact with the enemy. To determine sentry routes, guard hours and mess hours required active patrolling and continuous observation by German units. The information was then correlated with prisoner of war reports and compiled into intelligence that could estimate, almost to the hour, the Soviet attack. The Soviets' human tendencies were apparent in other collection efforts. It is human nature to better camouflage a position that one will occupy than a position to be occupied by someone else. Consequently, spotty camouflaging discipline by an exceptionally good camouflaging army alerted German aerial photo-interpreters to the thickening of a sector with new preparations for additional troops.

The Soviets' strict adherence to manuals of instruction was another revealing indicator. By meeting the exact specifications in ramparts widths and lengths, identification between prepared artillery and air defense positions was made easy.

The need for detailed intelligence estimates by S2/G2s has become one of the basic tenets of modern tactical operations. To be able to 'see the battlefield' is an all-discipline effort. Modern technology must be applied to take advantage of an enemy's radars, radios and equipment signatures. However, it was not the application of modern intelligence collection methods but rather of an Israeli reconnaissance

patrol that discovered the open "seam" between the Egyptian Second and Third Armies during the 1973 Yom Kippur War. This was crucial intelligence for the daring Suez canal crossing operation that allowed the Israeli Defense Force to assume the offense and bring the Egyptian army to capitulation.⁴

Aggressive patrolling into enemy lines has been, and will always be, extremely important. Patrol training must teach that reporting *all* information, no matter how detailed, contributes to a successful intelligence estimate. It is incumbent upon the modern intelligence officer not to allow the tactical intelligence of patrolling and accurate reporting to be neglected in this age of technology. The contribution of such efforts combined with prisoner of war reports and other information will be pieces of a puzzle in our 'mosaics.'

An information disparity on the battlefield gives one commander the confidence and knowledge to attempt a daring maneuver, and the other the caution that allows that maneuver to succeed. We must still depend on HUMINT as a significant collection means to build a confident intelligence estimate.

Footnotes

1. Sun Tzu Wu, *The Art of War*, translated by Lionel Giles, The Military Service Publishing Company, Harrisburg, PA, 1949, pp. 74-75.
2. David Kahn, *Hitler's Spies*, Macmillan, New York, 1978, p. 411.
3. *Ibid.*, pp. 102, 411.
4. Avraham Adan, *On the Banks of the Suez*, Presidio Press, San Rafael, CA, 1980, p. 191.

Soviet Military Power and Performance, Edited by John Erickson and E. J. Feuchtwanger, Archon Books, Hamden, CT, \$25.

Soviet Military Power and Performance, is a collection of essays that every military intelligence officer should read. Edited by John Erickson and E. J. Feuchtwanger, the book consists of nine papers originally presented at a conference in Great Britain. It is concisely written and gives a brief synopsis of all the Soviet services.

Essays cover the historical background of the Red Army; the Soviet military system; the Soviet soldier's training, behavior, performance and

effectiveness; and strategic perspectives. I found John Hemsley's *The Soviet Ground Forces* and Peter Vigor's *The 'Forward Reach' of the Soviet Armed Forces: Seaborne and Airborne Landings* to be the most interesting and informative of the essays.

Hemsley, a British Army Light Infantry Lieutenant Colonel, succinctly discusses Soviet doctrine. Offensive actions and the relationships between echelons and objectives are also covered.

Peter Vigor's essay is an interesting summary of the history of Soviet seaborne and airborne operations. He covers some of the successful seaborne operations as well as those which were not so successful. The limited Soviet airborne drops of

World War II are reviewed as well. More importantly, Vigor compares the standing of current naval infantry and airborne forces, as part of the overall Soviet military machine, to their function during World War II. He discusses how Soviet airborne units will most likely be deployed in any future engagements.

All in all, these two papers, and the seven other essays, make **Soviet Military Power and Performance** well worth reading.

2LT Eric K. Naeseth



The Political Factor: Guarding the Guards

by MAJ Wayne A. Silkett

To the Western mind, military service is typically apolitical. The party in power, the current government, the national economic structure—all provide the military with its legitimacy, mission and budgeting. Loyalty and obedience to ultimate civilian control are expected and taken for granted. Parties—Republican, Democrat, Labor, Conservative, Social Democrat—come and go as do governments. But constitutional provisos remain as do a tradition, heritage and virtually a principle of political neutrality within the armed forces.

This is the way of the West. In the Soviet Union, however, precisely the opposite tradition prevails. There the political factor is all-encompassing and all-important.

To its followers, Communism is historically preordained. It is not only desirable and attainable but also certain. Marxist-Leninist social science is far more than belief, more even than science: it is divine truth—demonstrable, provable, inevitable. Communism, so the dictum goes, will be the final step in the development of man's relationship with his fellows.

In the Soviet Union, there is but one source of ultimate influence, control and power—the Communist Party. No aspect of Soviet life, individual or collective, great or small, is beyond the direction and control of one segment of the party or another.

Guarding the party is primarily the job of the armed forces. And guarding the armed forces is the job of the party. The party does not "guard the guards," by constitutional provision and democratic expectation as in the West. In the Soviet Union, control over the "guards" is exercised by an extremely diverse network of overlapping, redundant and even competing agencies. It is control by organization and orders as well as by intimidation and surveillance, all often working against each other but always working for one goal—the

party. And the party loses no opportunity to stress that it, "and not the military commanders, is the leader and controller of the military."¹

Sources of Control

Political control over the armed forces is exercised by no less than six agencies: The Main Political Administration (MPA); Military Organizations; Party Control Commissions; the KOMSOMOL, and the Committee for State Security (KGB).

The Main Political Administration is the highest political organ in the armed forces and is a part of the Central Committee of the Communist Party. The MPA is the primary agency for party control over all five Soviet branches of service—strategic rocket, ground, air defense, air and naval forces.² MPA political officers are found at each echelon of the Soviet armed forces, from company/battery level through military district, group of forces and fleet level.

Deputy commanders for political affairs (the political officer—*zampolit*) are plainly and openly party functionaries. Among the *zampolit's* responsibilities, regardless of echelon, are political training, a role in all other training, sports and physical fitness, morale, discipline and propaganda. This does not mean, however, that the commander is completely relieved of political responsibilities. "Constant political work is the paramount task of commanders," proclaims *Red Star*, the Soviet Ministry of Defense daily newspaper.³

Although a commander's orders no longer must be countersigned by the political officer (dual leadership, shared by military commander and political commissar, has several times been a feature of Soviet military history), the very presence of a political officer, with his own MPA reporting channels and chain of command, ultimately insures party control. This parallel MPA chain

effectively dilutes the principle of "one man command."

Beside providing *zampolit* officers, the MPA also operates all military publishing houses, thus sanctioning every military book, journal or newspaper. Additionally, no favorable officer personnel action—schooling, promotion and few assignments—can take place without MPA validation.

Military Councils exist at the Ministry of Defense and service branch, military district/group of forces, front/fleet and army/lotilla levels. These councils discuss and occasionally decide matters dealing with military development, operations, training and logistics.

A military council consists of the unit commander (who acts as chairman), his political deputy, the local party secretary, his first deputy, the unit commander's chief of staff and usually a representative of the KGB.

In military councils, the principle of "one man command" is replaced by the principle of collective leadership. Military council decisions, while issued in the commander's name, are passed by a majority vote.

A third source of control is **party membership** itself. In political matters, said Lenin, "The army cannot and must not be neutral."⁴ Ever since the 1920's, when Trotsky tried unsuccessfully to place military professionalism above party matters, the armed forces—and particularly the officer corps—has been thoroughly politicized. Today, 90 percent of the entire officer corps is KOMSOMOL- or party-affiliated. This percentage increases by grade.

For the individual officer, party affiliation is no mere ticket-punch. Party membership is a very serious matter and party work is even more serious. While there is no substitute for an officer's professional qualifications, these qualifications are clearly secondary to political loyalty. The first requirement of a Soviet officer, stressed the late Minister of Defense, Marshal A. Grechko, is "a

communist conviction and utter dedication to the Party and people." By contrast, the fifth of Marshal Grechko's six requirements is military skill.⁵ And in a 1972 *Red Star* article, he rated military skill as sixth of six requirements in importance. First was being, "an active champion of Party policy."⁶

The degree to which the individual party member, especially the officer, displays this essential ingredient of communist conviction—"the definitive personality trait of the Soviet soldier"—is essential to his all-important political value.⁷ For, as noted above, promotion, schooling and assignments are all dependent upon political reliability as validated by the MPA.

Wherever there are three or more party members, the individuals are organized into Primary Party Organizations. Where there are 75 or more party members, a Party Committee is organized. In this way, individual party members are answerable to yet more party agencies.

Party Control Commissions play a significant role in such party membership activities as approval of new members, internal party discipline and expulsion of party or KOMSOMOL members. Outside the armed forces, these commissions have important economic functions as well.

Party Control Commissions—there are 170,000 of them in all—have their own organizational chain. Members of local commissions are elected at party meetings. In the armed forces, there is some membership overlap between party control commissions and the MPA.

The **KOMSOMOL**—Communist Youth League—is another important control agent. It is like a junior Communist Party and many members of the KOMSOMOL do later join the party. KOMSOMOL membership numbers some 28 million Soviet citizens age 25 and under.

In the Soviet armed forces, KOMSOMOL organizations are created and directed by the political sections in battalions and separate companies or their equivalents in the other services. The KOMSOMOL plays a very important propaganda role but its primary function is the grooming of potential candidates for party membership.

The **KGB** is the Communist Party's private army. It is the senior Soviet police and intelligence organization. A special branch of the KGB deals with the security and reliability

of the armed forces. This branch is enormously influential. Lack of KGB approval, as with lack of MPA approval, can easily preclude an officer from favorable personnel actions.

KGB special offices are maintained down to regimental level. In addition, KGB agents and informers can be found at all levels and in all branches of the armed forces, ever watchful for "any evidence of ideological deviation."⁸

Conclusion

No member of the Soviet armed forces can escape the Communist Party. The Soviet Communist Party assures its absolute control over the entire Soviet state in general and the armed forces in particular through a series of overlapping and redundant control agencies. Together, these measures provide the party with a host of checks and balances on the armed forces, thus providing for reliability, conformity and compliance. Constant monitoring and evaluation takes place not only within an already politicized military chain of command but also by a parallel but completely political chain. At the short-term conscript level, there are one's peers or members of the chain of command who are KOMSOMOL or party members. Then there is the *zampolit* and the potential KGB spy in the ranks. For the individual officer, the party looms even more ominously.

If an officer expects a worthwhile future, he had best belong to the party and prove himself to be politically worthy. The individual officer's political reliability is subject to continuous monitoring and evaluation by other KOMSOMOL and party members and organizations (such as Primary Party Organization and Party Commission). It means very close contact with—and evaluation by—the MPA. And it means satisfying the ever-present KGB. With so many sources ready to report disillusionment, disaffection, disloyalty or even political indifference, the Soviet officer is hard-pressed to lead any but the acceptable life, politically or otherwise.

If there is inefficiency in this control system, to say nothing of an inherent admission of failure of the Communist system to survive without a Byzantine network of mutually reinforcing spies and perpetual reports, there is unquestionably continuity, consistency and—most importantly—control. In short, the

guards are well-guarded.

Footnotes

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4. Vladimir I. Lenin, **Sochineniya (Collected Works)**, State Publishing House for Political Literature, Moscow, 1927, Vol XII, p. 13.
5. Marshall A. A. Grechko, **The Armed Forces of the Soviet State**, US Government Printing Office, US Air Force Translation, Washington, DC, 1975, p. 187.
6. *Krasnaya Zvezda*, op cit., pp. 1-3.
7. A. M. Danchenko and I. F. Vydrin (ed.), **Military Pedagogy**, US Government Printing Office, US Air Force Translation, Washington, DC, 1973, p. 280.
8. Harriet Fast Scott and William F. Scott, **The Armed Forces of the USSR**, Westview, Boulder, CO, 1979, p. 257.

The Falcon and the Snowman, by Robert Lindsey, Simon and Schuster, 1979, 53 pages.

In 1977, two American youths were convicted of selling highly classified information regarding surveillance satellite operations to the Soviet Union. Hundreds of CIA ciphers, decoded messages and technical data were passed to KGB agents attached to the Soviet Embassy in Mexico City. The then-secret Rhyolite satellite project, developed under contract to the CIA by TRW Corporation, provided the US with the world's most advanced electronic surveillance capability. This espionage enabled the Soviets to advance the technology of their rival surveillance satellite projects.

The Falcon and the Snowman describes Christopher Boyce and Daulton Lee, falconer and drug dealer, who grew up companions in an affluent Los Angeles suburb. Boyce, a 21-year-old TRW employee with a high school education and a Top Secret security clearance, operated a cryptographic message system linking TRW with the CIA, giving Boyce access to a wide range of communications data concerning the Rhyolite and other clandestine satellite projects. Boyce photographed documents and spirited them to Lee, who in turn sold them to KGB agents he approached at the Soviet Embassy. Their espionage scheme led to a two-year liaison yielding thousands of dollars to the

youths before their arrest by Mexican police and the FBI.

Author Robert Lindsey, after extensive interviews with Boyce and Lee, suggests several motives for their crime, including disillusionment resulting from a perceived discrepancy between US ideals and actions abroad. The two sensed a certain blindness in the CIA and KGB officials they met, who seemed

oblivious to the consequences of their employment. Similar criticism could readily be applied to Boyce and Lee themselves. Undoubtedly, the lure of large amounts of money, feeding a hunger instilled by drugs and adventure, produced a blindness of its own.

The Falcon and the Snowman presents a detailed account of actual espionage that engages the reader

as effectively as the best spy novels. In light of similar recent incidents, the author contributes valuable insights on motives for espionage, and raises questions concerning the vulnerability of national security.

2LT John J. Flournoy, III
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Intelligence—Electronic Warfare Mission Area Analysis

by MAJ John H. Black

The Directorate of Combat Developments, USAICS has recently published the Intelligence Electronic Warfare Mission Area Analysis (IEWMAA) Level I Report. The Level I IEWMAA was an initial assessment of the IEW mission area through 1986 based on a review of available data and subjective analysis of the results of past studies, analysis and military judgement and experience. (See *Military Intelligence Magazine*, July-September 1980, page 58). Initial distribution of the Level I report was made in December 1980 and copies are available to government agencies through the Defense Information Center (DTIC), using acquisition number AD-C023745L.

The IEWMAA is a part of a DOD/DA/TRADOC Mission Area Analysis (MAA) process directed by the Office of Management and Budget (OMB). This Mission Area Analysis process requires the Army to focus on its role in helping achieve national military objectives and executing the national military strategy. This view requires the Army to address directly its combat missions (e.g. close combat, IEW, fire support, etc) as they relate to overall war fighting capability. The real value of the MAA derives from its ability to contribute to a new philosophy for viewing the Army in terms of what it does and what it needs to do in order to be able to do its job better. It offers a needs-first, mission related, combat-output-oriented approach to planning, programming and budgeting. The most valuable benefit gained from the MAA pro-

cess is the development of an understanding of the Army's needs by approaching a mission (e.g. IEW) in a systematic, logically consistent fashion prior to making resource allocation decisions.

The follow-on Level II IEWMAA study, which is currently being conducted by the Studies and Analysis Branch, Combat Developments, USAICS, is based on an orderly analytical extension in depth and breath of the Level I IEWMAA. The objectives of the Level II IEWMAA are to:

- ★ Identify significant Army IEW support needs out to the 1990 time frame.
- ★ Determine the capability of current and programmed IEW support assets to satisfy the identified needs.
- ★ Clearly identify and prioritize deficiencies in terms of concepts, doctrine, force structure, training and material.
- ★ Provide recommendations to correct identified deficiencies based on operational effectiveness considerations with recognition of resource impacts.

The Level II IEWMAA will include an analysis of the performance of IEW Sensor and Electronic Countermeasures (ECM) Systems, analytic and collection management techniques, and organizational structures, by the use of wargames and computer battle simulations. After an assessment of the IEW performance is completed, the MAA analysts will be able to determine a more efficient IEW organization for the future. The last step in the Level

II analysis will be an assessment of the total contribution of the IEW system to the outcome of the land battle, by using a computer simulation of a force-on-force scenario. The relative value of IEW to the commander will be documented in quantitative terms. Results of the Level II IEWMAA will be applied to the Army's Planning, Programming and Budgeting System (PPBS) to assist in the resource allocation process.

Although the Directorate of Combat Developments (DCD) is responsible for the IEWMAA studies, significant USAICS in-house contributions are being made by all elements within USAICS and USAISD. Additionally, extensive support is being provided by the TRADOC Systems Analysis Activity (TRASANA), the Electronic Proving Ground (EPG) and various defense contractors. The results of the IEWMAA Level II performance analysis will be available in the December 1981 time frame.

Since the IEWMAA is a dynamic process, comments and recommendation on either the Level I or Level II efforts are welcomed by the IEWMAA Analysis Team. Input should be sent to: Commander, USAICS, ATTN: ATSI-CD-CS-SA, Fort Huachuca, AZ 85613.

USAICS Notes

USAICS Instructors of the Month

The USAICS Instructor of the Month for February 1981 was SSG Nancy Elaine Hendon. An instructor with the Exploitation Division of the Department of Human Intelligence (DHI), SSG Hendon teaches Interrogation and also serves as a Senior Faculty Advisor. SSG Hendon entered the Army in May 1975. Prior to her arrival at USAICS she served with the 18th MI Battalion, Munich, Germany. SSG Hendon has a BA Degree in Political Science with a minor in French and Education. She is presently working on a Master's Degree in Counseling.



COL William P. Del Vecchio, Director of Training and Doctrine, USAICS, presents Instructor of the Month award to SSG Nancy Elaine Hendon.



The USAICS Instructor of the Month for March 1981 was SFC Joseph W. Noyes, an instructor with the Command and Staff Branch of the Department of Tactical Intelligence and Military Science, Directorate of Training and Doctrine. SFC Noyes teaches chemical/biological defense; nuclear, biological and chemical warning/reporting systems; and decontamination. He also serves as primary writer and developer for the NBC course.

SFC Noyes has 19 years active military service. Before reporting to USAICS, he served with a brigade headquarters in Germany as NBC NCO and Assistant Operations Sergeant.

COL William P. Del Vecchio, Director of Training and Doctrine, USAICS, presents Instructor of the Month award to SFC Joseph W. Noyes.

The USAICS Instructor of the Month for April was SSG Milton R. Hendon. SSG Hendon is currently assigned to the Department of Tactical Intelligence and Military Science in the Tactical Intelligence Branch as an instructor in Military Symbolology, Enemy Organization, and Weather and Terrain Intelligence. He also serves as Faculty Advisor to Intelligence Analyst Students.

SSG Hendon entered Army service in September 1972. Prior to his arrival at Fort Huachuca in July 1979, SSG Hendon was assigned in Munich, Germany. SSG Hendon is currently enrolled in classes at Cochise College.



SSG Milton R. Hendon

USAISD Honors Top Academic Instructors

The United States Army Intelligence School, Fort Devens (USAISD), MA, honored its top instructors recently during its annual Charles H. Hiser Awards Ceremony.

Each month, an instructor is chosen Instructor of the Month in competition against all other USAISD classroom instructors. The monthly selectees compete for final honors, with final selection made by a committee composed of representatives from the Directorate of Evaluation and Standardization, Directorate of Training Developments, and the Chief of Staff, USAISD.

The three finalists competing for this year's award were SFC Michael L. MacDonald, Mr. Robert W. Caplin and Mr. Gregory N. Brayson. Each displayed outstanding talent and ability as an Intelligence School classroom instructor.

SFC MacDonald was selected as the USAISD Instructor of the Year for 1980. He is assigned to USAISD as an Instructor in the Signal Security Branch, Advanced Individual Training Division, Electronic Warfare/Cryptologic and Security Department, Directorate of Training and Doctrine.

First Runner-Up was Mr. Caplin, an Instructor in the Basic Theory Branch, Electronic Maintenance Division, Maintenance Training Department, Directorate of Training and Doctrine.

Second Runner-Up was Mr. Brayson, also assigned as an Instructor in the Basic Theory Branch, Electronic Maintenance Division, Maintenance Training Department, Directorate of Training and Doctrine.

Brigadier General James A. Teal, Jr., USAICS commander, was the keynote speaker at the ceremony. BG Teal also presented certificates and awards to the three instructor of the year finalists.

History of the Charles H. Hiser Award

The Charles H. Hiser Award is named for Colonel Charles H. Hiser, Commandant of the United States Army Security Agency Training Center and School (now USAISD) from August 1958 to June 1960. During that period, he initiated a number of training innovations, most notably the modernization of the Training Center's Automatic Data



Brigadier General James A. Teal, Jr., presents the Army Commendation Medal to SFC Michael L. MacDonald, US Army Intelligence School, Fort Devens, Instructor of the Year. BG Teal is the Commander, US Army Intelligence Center and School, Fort Huachuca, AZ. SFC MacDonald is an In-

structor in the Signal Security Branch, Advanced Individual Training Division, Electronic Warfare/Cryptologic and Security Department, Directorate of Training and Doctrine. (US Army Photo by Specialist Four Mark Thibodeau).



Finalists in the US Army Intelligence School, Fort Devens, Instructor of the Year competition and their "coaches." From left to right, SFC Michael L. MacDonald, Mrs. Yank Suk MacDonald, Mr. Robert W. Caplin, Mrs. Mary Caplin, Mrs. Nancy Brayson and Mr. Gregory N. Brayson. (US Army Photo by Specialist Four Mark Thibodeau.)

Processing systems.

The award was established to bring recognition to the Intelligence School's outstanding classroom instructors. Presentation of the award began in 1960, and, except for the period from 1964 to 1969, has been conferred annually.

Officer Notes

Career Management and Assignment Responsibilities

by MAJ Jerry Pickar

To many Military Intelligence officers, career management appears informal and unorganized—a hit or miss proposition governed by word-of-mouth and spur-of-the-moment requirements. This real or perceived lack of structure gives added importance to the first few assignments of our junior officers, assignments that make or break careers.

The first permanent assignment of three to four years is often the most important. Impressionable young officers quite naturally feel (and are encouraged by their superiors to believe) that their current job is more important and more difficult than jobs in other disciplines or jobs. As a result, each individual develops a prejudice against levels or types of activity which he/she has not personally experienced.

During my 14 years alternating between tactical and strategic 35 and 37 jobs, I have invariably adopted the conventional wisdom of my surroundings, believed in, and voiced the importance of each current position. This phenomenon was accompanied by some decrease in prominence of each previous assignment. After many years, I realized how fortunate I was to have had some excellent teachers—people who understood my limitations of ability and experience, and worked (often without my knowledge at the time) to help me gain a better perspective of possible and desirable steps in MI professional development.

In addition to good leaders, I had a better chance of success because my early 35 assignments required some 37 skills and 37 was my natural choice for an alternate specialty. My career has required near constant work in both skills—difficult under the dual track system and with branch-immaterial assignments. Few of my contemporaries have been as fortunate, but prospects are much brighter for future generations of MI lieutenants. For the first time in the history of the Military Intelligence branch, MI officers can go from O1 to O6 in tactical (Corps and below) CEWI units. Those senior lieutenants or new captains who choose not to continue in tactical assignments now have the benefit of building on a very solid tactical foundation.

I found the Divisional MI Battalion (CEWI) to be an ideal place for junior officers to grow into MI professionals. New lieutenants were guided by MI professionals through a series of the very best learning positions—platoon leader, company executive officer, division and brigade intelligence operations and analysis, maneuver and artillery battalion S2, G2 and MI Battalion staff assistants. Lieutenants with all three MI

To many Military Intelligence officers, career management appears informal and unorganized—a hit or miss proposition governed by word-of-mouth and spur-of-the-moment requirements. This real or perceived lack of structure gives added importance to the first few assignments of our junior officers, assignments that make or break careers.

specialties developed a solid foundation of intelligence skills while living and working together. They were constantly “rubbing shoulders” with their combat arms contemporaries, and they worked daily with the brigade and division operations and support elements. I saw lieutenants develop tactical intelligence operational skills (cryptologic, EW, all-source analysis, collection management and planning, surveillance, communications, etc.) while they learned firsthand how intelligence supports combat operations.

The Divisional MI Battalion (CEWI) provided double benefits: the personnel, equipment and leadership challenge equal to a combat arms unit, plus a fertile environment for learning critical career intelligence specialty skills. It was this potent combination that produced the best crop of MI lieutenants I have ever seen. They are now active duty captains who continue to do very well.

Another benefit of the Divisional MI Battalion (CEWI) was that it provided the MI lieutenant with training and experience at least equal to that once

provided by the two-year combat arms detail for RA intelligence officers. This is particularly important because MI draws the best junior officers, many of whom qualify for RA commissions. Learning to be a platoon leader is important, so is gaining an understanding of and an appreciation for combat arms, but learning intelligence skills is more important for MI lieutenants. The best possible combination of these learning experiences is now available to the MI lieutenants who serve consecutive tours as platoon leader and company XO in a MI Battalion (CEWI) and then as S2 in a maneuver battalion. MI lieutenants gain an obvious head start on learning their intelligence specialty and, most important, in being able to provide good intelligence support to combat commanders.

In addition to being unnecessary, the revival of the (male-only) combat arms detail for MI lieutenants would only compound the already existing problem caused by (formal and informal) male-only combat associated assignments—maneuver and artillery battalion S2, ground surveillance platoon leader, brigade S2, MI Battalion (CEWI) Brigade Liaison Officer, and in contingents deployed to Division, Brigade, or Division Artillery Tactical CPs. In 1976/1977, 25 percent of the officers in the 522d MI Battalion (CEWI), 2d Armored Division, were female (11 of 44; 2 captains and 9 lieutenants). If all available male lieutenants had been assigned to the “male-only” lieutenant slots, “female-only” lieutenant positions would have been created in the C&J Platoons, HHC, EW, and Service Company Headquarters, and in battalion staff positions. This situation is certainly not desired by management or by male or female lieutenants. Rotation of all lieutenants through line and support assignments is necessary for healthy career growth and individual job satisfaction.

Possible alternatives to the above problem include assigning female lieutenants to Corps or higher headquarters and staffs; not filling and, therefore, defaulting battalion S2 positions to untrained combat arms officers, or consciously recognizing creation of “female-only” lieutenant positions in

tactical MI units. As none of these alternatives are desirable, the only recourse must combine squelching rebirth of the RA combat arms detail and careful management of MI lieutenants. Career management must include assignment of most lieutenants to tactical assignments rather than higher headquarters, selective progression of lieutenants within tactical units, and movement of experienced female lieutenants into the marginal "male-only" positions in tactical units. Women have a vital and constructive role as MI officers. They must be able to benefit from the unique professional growth opportunity available in the Divisional MI Battalion (CEWI). Yet, excessive numbers will upset the precarious balance between a tactical unit's combat and support missions.

During this period of limited re-

For the first time in the history of the Military Intelligence branch, MI officers can go from O1 to O6 in tactical (Corps and below) CEWI units. Those senior lieutenants or new captains who choose not to continue in tactical assignments now have the benefit of building on a very solid tactical foundation.

sources, we must not lose sight of the tremendous gains gradually being achieved through continued activation of Corps and Division CEWI units. It is

now that we must employ our most vital asset—people—with greatest care. Each supervisor must provide the involvement needed to ensure individual motivation and career progression. We must gain an understanding of the perspective from which soldiers view their current activities and aspirations, and we must assess their potential for growth. There is no set program for ideal professional development, but the Division MI Battalion (CEWI) offers several excellent job combinations, controlled by senior MI professionals, that will challenge and motivate soldiers while developing their intelligence skills.

MAJ Pickar is the Tactical Cryptologic System Management Officer in the Programs and Resources Directorate, National Security Agency, Fort Meade, MD.

The Officer Distribution Plan

Probably the most maligned and misunderstood personnel management tool is the ODP. It's a mission statement, a goal, a constraint, a device to hide behind, a club used for compliance, or a planning tool, depending on one's perspective. In fact, the ODP is a necessary technique for the equitable distribution of officer shortages in consonance with the Army's missions and established priorities.

The Army's Deputy Chief of Staff for Operations (DCSOPS) publishes the Department of the Army Master Priority List or DAMPL. This DAMPL is one of three major factors that contribute to the development of a given fiscal year's ODP. The DAMPL assigns one of five personnel priority model (PPM) categories to each command or activity. A "DAMPL One" unit will have the highest fill of personnel in the model and in the ODP support.

The second major factor in developing the ODP is the statement of personnel authorizations by grade and specialty. There are four separate statements of personnel authorizations (FAS, TAADS, MTOE/TDA, and PERSACS) each with a specific purpose and often reflecting different data. It is important to understand that authorizations, when impacted by the DAMPL, are significant elements of the ODP. It is equally important to understand that assignment officers in MILPERCEN rarely deal with authorizations, but rather ODP support levels.

The third and last factor in the ODP is the toughest to ascertain; that is the officers projected operating strength. This strength is based on a snapshot of the officer corps by serving grade and

specialty on a specific date.

The difficulty in estimating the projected operating strength by grade and specialty is that we have, in effect, a two dimensional officer corps (two specialties) serving in generally one dimensional assignments (against a single specialty, known as the central specialty). To assist in planning the ideal mix on a given date, MILPERCEN uses a computer program titled the Assignment Utilization Plan (AUP). The AUP is designed to optimize the grade and specialty mixes to meet Army requirements.

The AUP is not used in the PPM but rather guides Assignment and Professional Development officers in each branch in the Additional Specialty Code (ADSPEC) selection and designation process in an attempt to pattern an officer population to meet grade/specialty needs.

The ODP support level for each major command by grade and specialty is the end result of repetitive computer runs of the PPM optimally computing the number of lieutenants through colonels serving in specialties 11 through 97. The effort provides all MACOMs with some officers to meet their needs and a greater percent of fill to the higher DAMPL units.

When you talk to your assignment officer discuss ODP levels and not authorizations. ODP support to the MACOM is his mission.

Wayne L. Worthington
COL, MI
Chief MI Branch, Combat Support Arms Division

The Army Trainer

The US Army Training Support Center, Fort Eustis, VA, is starting a new publication aimed at helping to train the Army's trainers. The new quarterly magazine, *The Army Trainer*, is targeted to those soldiers in grade E5-O3 who are involved in training—from platoon sergeants through company/battery commanders—along with training developers.

The Army Trainer's purpose is to provide an Army-wide forum to identify, integrate and explain the use of the many and varied parts of the Army Training System.

The goals of the magazine are to improve training and combat readiness; publicize new training ideas, techniques and products; translate training policy into action; stimulate interest in the training system; and create a medium for the exchange of information and ideas.

LTC Charles J. O'Brien, acting editor-in-chief, has said the first issue will be distributed in August 1981.

The Army Trainer is anxious to receive articles dealing with unit/collective training, experience with new training methods/devices, and feature articles dealing with trainers, that its audience would find useful.

For further information, or to inquire about submitting articles, contact: Editor, *The Army Trainer*, US Army Training Support Center, ATTN: ATIC-AET, Fort Eustis, VA, 23604. The telephone number is (804) 878-4587/4605; AUTOVON 927-4587/4605.

Enlisted Notes

MOS 97B Recruitment

Intensive recruitment efforts are being directed toward enlisted soldiers in grades E4 through E6 for training in MOS 97B. All counterintelligence personnel, grades E6 and above, are encouraged to seek qualified applicants in their respective areas of operation. All counterintelligence personnel who have been approved for retention are authorized to conduct personal interviews and complete the statement of interview in accordance with Procedure 3-33, DA Pam 600-8. The more personnel involved in the recruiting and interviewing process, the greater our chances of getting qualified applicants. During the recruitment process, the following must be considered:

- Soldiers must meet the prerequisites of *Table 7-1, AR 614-200*, 1 February 1980. Waivers will be considered for all prerequisites in accordance with *Interim Change 2, AR 614-200*.
- Soldiers who will have fewer than 10 years' active federal service (AFS) upon completion of the MOS 97B course, may submit an application under the Bonus Extension and Retraining (BEAR) Program in accordance with *AR 601-280*. However, applicants for this pro-

gram must be fully qualified, without waiver, since only the most highly qualified are accepted. Approved applicants will be eligible to reenlist upon completion of the course and receive a Selective Reenlistment Bonus (SRB) in Zone 4A (6 years AFS or less) or Zone 2B (6-10 years AFS).

- Airborne soldiers are needed at Fort Bragg, NC. Qualified soldiers who desire airborne training upon completion of the course, will be assigned to the Airborne School enroute to a unit located at Fort Bragg.
- Applications from soldiers, grade E7 or above, who will have more than 12 years AFS, will normally not be considered unless they have an extraordinary special qualification Military Intelligence needs. Reclassifying to a new MOS after serving more than 12 years is not considered favorable for a soldier's career development.
- We will consider school training in a TDY and return status. However, all funds must be borne by that installation or unit commander. In the event a sol-

dier receives training in this status, we will not PCS that soldier for at least one year to another unit. Forwarding indorsements to applicants application must state whether TDY will be funded by that installation/unit. Of course, a vacancy for the soldier's grade and MOS must exist at the installation/unit.

- Initial assignment of all graduates will normally be to a non-tactical (strategic) counterintelligence unit. Exceptions are made when a soldier requests Airborne/Special Forces training, or an installation where only tactical vacancies exist.
- Approved soldiers are now assigned to a class upon initiation of the SBI. The old six to nine month waiting period no longer exists. Final decision of all applications is made within 45 days of receipt at this headquarters.
- Soldiers serving overseas may apply at any time after arrival in the oversea command. However, they will be required to complete their normal tour prior to attendance.

97B10: Counterintelligence Assistant—The Incentive

by MSG Larry D. Hamlin

On 6 January 1981, the first class of Counterintelligence Assistants, (also referred to as Bravo Tens by the instructors in the Counterintelligence (CI) Division, Department of Human Intelligence, USAICS), began their trek down the hallowed halls of the Intelligence School: a 10-week trip into a brand new concept.

As an instructor of Bravo Tens, I am very interested in clearing up any misconceptions about the PV1's and PV2's who will soon enter a field previously open to enlisted personnel with at least two years of active duty service.

For a number of years, a dire shortage of CI Agents (97B20/30/40) has existed in the Military Intelligence Branch. Great minds pondered possible solutions to the problem. Finally it

was decided that 97B should become an entry level military occupational specialty (MOS). To that end, a number of slots in each 97B class were devoted to E1's and E2's fresh out of Basic Training. For the past year, privates have attended classes with in-service students. The intent was to assign the young agents to tactical units, providing them with an opportunity to experience the many facets of the tactical CI environment while releasing the E5's and E6's for assignment to worldwide shortages. While this program has met with success, it has not been as successful as anticipated. As a result, the Bravo Ten received a brand new title: Counterintelligence Assistant. His/her 10 weeks of training compares with 18 weeks for in-service personnel. There are now two facets of the same 97B MOS. Privates (E1's and E2's) trained in 97B10 will be oriented to a tactical CI

environment, receiving more instruction on those subjects, and substantially less instruction on the "traditional" role of the peacetime CI Agent. As a matter of fact, the Bravo Ten will receive no instruction on the conduct of CI investigations and will not be issued badge and credentials. Those soldiers with more than five years in CI work may recall that the last time CI Assistants were used, they were called coordinators. Many very good agents were former coordinators, and I firmly believe that many more very good and very professional agents will, in the future, be former Bravo Tens.

The trek I mentioned earlier will not end at graduation, nor will 97B10s above experience change. The program will work, but it's going to require the understanding and leadership incumbent upon all truly professional Military Intelligence personnel.

Retention of Counterintelligence Personnel (MOS 97B)

All soldiers awarded MOS 97B, Counterintelligence Specialist, are required to serve a one-year probation period or until age 21, whichever is longer. The probation period starts with the day of duty following award of MOS 97B and, during this period, soldiers should not be used on sensitive investigations. The purpose of the probationary period is obvious—to ensure that only the best personnel are retained in MOS 97B. The soldier's demonstrated overall performance, capabilities and potential must be evaluated continuously.

Upon completion, the soldier's immediate commander must submit a recommendation for retention or non-retention to DA MILPERCEN in accordance with paragraph 7-10c of AR 614-200. Along with this recommendation,

the soldier must submit a 45 minute biographical composition in accordance with Figure 3-33-6 of DA Pam 600-8. This will only be required from those soldiers who were not previously screened by the DA Review Board prior to attendance at the MOS 97B course (i.e. most off-the-street enlistees). The purpose of the composition is to determine the soldier's capabilities of reasoning and written expression and to evaluate his/her understanding of English grammar and punctuation.

Commanders should realize that the new MOS 97B10 course at Fort Huachuca does not include a report writing phase. Those soldiers who attended the MOS 97B10 course and are approved for retention will be required

to attend an additional eight weeks of instruction which will include a report writing phase. Accordingly, the soldier's knowledge of English grammar will play an important part in the retention process.

Additionally, ALL soldiers approved for retention must be continuously reevaluated. Those soldiers demonstrating an inability to perform duties commensurate with their grade or meet the high standards of military intelligence, must be reported to DA MILPERCEN for reclassification in accordance with paragraph 7-12 of AR 614-200. Our objective is to retain only the most highly qualified and career motivated soldiers in the counterintelligence field.

MOS 97C-Critical Shortage

The Army is experiencing shortages in MOS 97C (Area Intelligence Specialist). Attempts are being made to find highly motivated and qualified soldiers to fill this critical field. MOS 97C presently has a SRB in Zone B and C and a request is pending in the defense budget toward a shortage specialty pay of \$150 a month. This MOS offers language training and duties involving daily contact with the local community in a foreign country, quite an attractive package for soldiers considering the specialty.

As a 97C3, a soldier's duties will include: acquiring and screening human intelligence (HUMINT) operational data; conducting HUMINT target research and analysis; planning and conducting HUMINT collection operations; screening, assessing and interviewing of potential sources of HUMINT; debriefing sources; evaluating collected information for adequacy, accuracy, and validity; preparing and editing HUMINT information reports; correlating information reports with collection requirements, and insuring the appropriate dissemination to all interested analysts

and national consumers.

Soldiers wishing to apply for 97C must meet the criteria outlined in **AR 611-201**. In addition to requirements in **AR 611-201**, the soldier must have a DLAB score of 89 or higher or have successfully completed the DLI foreign language course or have scored at least 2/2 on an Army language test as prescribed in **AR 611-6**. The soldier must also undergo an in-depth interview prior to acceptance.

Qualified soldiers desiring MOS 97C training must either request the training through MILPERCEN in conjunction with a PCS move or be nominated by a unit commander familiar with 97C qualifications and prerequisites. Once nominated, the individual can expect a two- to six-month period before final approval is received; the longer period applying mainly to overseas applicants. The nominated soldiers will be contacted by the US Army Administrative Survey Detachment (USAASD), INSCOM, who will arrange for screening and the interview. Consideration for MOS 97C training will be given to all enlisted personnel holding any MOS

and recommended by MILPERCEN or a MI unit commander with 97C MOS positions.

Enlisted personnel can request MOS 97C screening to determine if they are acceptable for MOS 97C training at any time and if acceptable will be considered for entry into the field upon reaching qualification for PCS. This is done by using DA Form 4187 (Personnel Action Request) and forwarding it through channels to MILPERCEN (DAPC-EPL-M). The guarantee of MOS 97C training and assignment is not a reenlistment option, but if found qualified and approved for acceptance into 97C training, the individual soldier will be required to meet service remaining requirements.

The Army needs to fill the critical shortage in the 97C MOS with highly qualified soldiers. But the first step is to ensure that soldiers are solicited by their unit commanders, career counselors and reenlistment NCO's. For further information contact the training branch of the US Army Administrative Survey Detachment, INSCOM, ATTN: IASV-OT, Fort Meade, MD 20755, or call AUTOVON 923-6364/6349.

Military Personnel: Associate Degree Program

Interested in obtaining a college degree where you can receive credit for skill, experience, and knowledge already acquired? The Servicemembers Opportunity Colleges Associate Degree (SOCAD) program could be what you are looking for. SOCAD is a project of the Servicemembers Opportunity Col-

leges (SOC)—more than 400 post-secondary institutions, in conjunction with the Department of the Army, offering college-level courses for enlisted personnel, particularly noncommissioned officers, and warrant officers. Associate degrees can be earned in fields ranging from civil engineering

technology to food service management. Further information can be obtained from Servicemembers Opportunity College, Suite 700, One Dupont Circle, Washington, D.C. 20036. Telephone: (202) 293-7070.

Professional Reader

P-47 Thunderbolt at War, by William N. Hess, Charles Scribner's Sons, New York, NY, 1976, 160 page, \$17.50.

P-47 Thunderbolt at War is one of a series published by Scribner's on aircraft at war. It is basically an illustrated account of the P-47 Thunderbolt showing its use in various theaters of operation during World War II. Mr. Hess has also gathered first-person accounts by pilots who flew this large, heavy and powerful aircraft.

The Thunderbolt was intended to serve as a fighter. However, its weight and size kept it from being quick enough in turns to be good at "dog fighting." It was very fast at climbing and diving though, and served extremely well as a fighter-escort for bombers and as a dive-bomber.

The P-47 was most successful as a dive-bomber. Although there was no existing tactical doctrine for dive-bombing, Thunderbolt pilots soon wrote their own book on bombing, strafing and bridge-busting. Medium bombers had attempted to knock out bridges by using a "walking" pattern of bombs across the target, but often missed the bridge completely. Thunderbolt pilots planned their angle of attack, dove down and released their bombs right into the substructure. They also taught themselves to "skip" bombs into railroad tunnels to block them, and in at least one case, to bounce their machinegun bullets off a tarred road into the underside of heavily armored German Panther and Tiger tanks.

In one week during March, 1945, Thunderbolts of the 371st Fighter Group flew 157 missions against the German Seventh Army. According to Hess, "they destroyed 1,346 motor vehicles, damaged another 1,154, destroyed 180 buildings and factories, demolished 127 railway cars, and knocked out 79 tanks."

The Thunderbolt was a rugged airplane. P-47s regularly flew home with bullet holes, tears and other damage that would have destroyed any other US fighter aircraft. In July, 1944, Lt. Robert Goff of the 366th Fighter Group was headed back to base with a shot-up engine that squirted oil all over his windshield. Unable to see, Lt. Goff flew right into the second story of a brick building, was helped out of the cockpit, examined by the medics, ate a meal, and returned to base. In the Pacific theater, a Thunderbolt flew

too low and sheared off a palm tree — sustaining only a dented wing.

Although the P-47 Thunderbolt could not serve its intended purpose as a "pure" fighter, its success as a dive-bomber is another example of the resourcefulness of the American fighting man. I recommend the **P-47**

Thunderbolt at War to the general military audience—it has a message!

Robin J. Robbins, Ph.D.
CPT, MI, USAR

Military Small Arms Ammunition of the World 1945 – 1980, by P. Labbett, Presidio Press, San Rafael, California, 1980, \$18.95.

Military Small Arms Ammunition of the World 1945 – 1980 is a much-needed reference book on military small arms ammunition. There are seven chapters and two appendices. The chapters provide an introduction to military small arms ammunition and give the components and nomenclature as well as a concise history of ammunition development. Chapter 4 provides a profile of the individual cartridges and Chapter 5 provides a geographical register of ammunition producers and users. Chapters 6 and 7 provide guidance on color identification codes and packaging and markings used by various countries.

The appendices provide a guide to non-Western alphabets and numerals and an inch-caliber to metric-caliber conversion table.

With the current world situation of small conflicts in various locations, there is an increasing need to understand who is supporting who, and through the analysis of captured munitions, the intelligence officer can gain some insight to the source of supply. This book provides an excellent reference work to assist intelligence personnel. It goes beyond the handbooks published by the Foreign Science and Technology Center and is less cumbersome than a complete library of small arms and cartridge collectors' books.

The book is small and expensive but contains a great deal of information. It will be of great interest to small arms collectors and cartridge collectors and should be included in intelligence reference libraries at division and higher. All Technical Intelligence units should consider owning a copy. For most people

that are not directly connected with ammunition or analysis of ammunition, this book is of limited value in light of the cost.

William L. Howard
MAJ, Armor, USAR

Strategic Deterrence in the 1980s, by Roger D. Speed, Hoover Institution Press, Stanford, CA 174 pp., \$7.95.

Strategic Deterrence in the 1980s is an excellent analysis of the United States' strategic force posture for the 1980s, including what is needed to correct its inherent weaknesses. Author Roger Speed is a physicist and senior defense analyst at R & D Associates, Marina del Rey, CA. In a well-footed effort, he outlines a detailed, often critical, essay on the growing vulnerability of the US land-based ICBM force due to increasingly accurate Soviet missiles.

An entire chapter is devoted to the expanding Soviet submarine-launched ballistic missile force and the danger of a depressed-trajectory attack on American Strategic Air Command B-52 bases. He argues that the current SAC basing mode is outdated and that to increase our bomber force survivability, new bases and alert procedures must be developed. Speed also hits the critically important issue of intelligence analysis and its role in strategic force planning and deployment. He discusses the much-noted "B-Team" threat analysis of the Soviet force structure done under President Ford's direction when a group of independent missile experts were tasked to come up with their own conclusions independent of the national intelligence community.

In discussing strategic force survivability, Speed covers silo hardness, reliability factors, the nuclear fratricide issue, ASW, C³, Launch-on-Warning, ABM deployment, Launch-thru-Attack and the importance of the development and utilization of the cruise missile.

The author believes four key courses of action should be taken to strengthen deterrence in the American force posture: 1) the design of a new basing mode for the ICBM force which will be insensitive to Soviet improvements in missile accuracy; 2) the creation of at least 50 remote bomber bases in the interior of the continental United States to insure bomber pre-launch survivability; 3) the deployment of a large

force of cruise missiles to saturate the extensive Soviet air defense system; and 4) expansion of the operational area of the strategic SSBN force by deploying new, longer-range missiles, or by changing present operating procedures.

All in all, despite being somewhat pessimistic about US strategic force survivability, Speed has written a short, highly-readable, but well-documented book. It should be on every defense planner's reading list.

2LT Eric K. Naeseth
Co G, USAICS

Free Flight by Douglas Terman,
New York: Scribner's Sons, 1980,
349 pp., \$11.95.

Free Flight is a novel which brings to mind Bradbury's *Fahrenheit 451* and Orwell's *1984*. Set in the United States following an all-out nuclear exchange, the story follows the experiences of an Air Force officer, Greg Mallen, who survived the war while on leave in the Vermont mountains. Mallen finds himself being hunted by the totalitarian government in power since the war and the story centers around his evasion from capture.

Doug Terman, an ex-Air Force officer himself, is the author of the well-received *First Strike*. In this book he attempts to bring together some of his own experiences in flying. The result is a series of vignettes featuring various aircraft but little substantive plot to support them.

If you enjoy a well-written book containing numerous descriptions of flying in the northern mountainous area, this book is for you.

Captain Don Rightmyer, USAF
Office of Air Force History
Washington, DC

Military Vehicles of the World, by
Christopher F. Foss, Charles
Scribner's Sons, New York, 1978,
192 pages, \$8.95.

Tactical support vehicles have never captured the spotlight in the annals of military history. Nevertheless, what army in the world would ever go to war without them? Christopher Foss' *Military Vehicles of the World* provides an inglorious, but practical reference guide to all the major wheeled and tracked cargo vehicles found in military service throughout the world. All NATO and Warsaw Pact Countries are represented, along with several non-aligned

nations.

The information is arranged in alphabetical order by country of manufacture. For every vehicle, there is a clear black-and-white photograph, a detailed chart of specifications, and a short discussion of the development and use of the vehicle. Furthermore, descriptions of the variants of each model are included along with a list of countries employing the vehicle.

Due to the large variety of vehicles produced since World War II, the author has chosen to include only those which are presently in service or at a very advanced stage of development.

This book is the fourth in the author's series of references on weapons and vehicles of the world. It should prove especially helpful to military personnel wanting to know the identification or capabilities of any major non-fighting vehicle in the world.

2LT Randy R. McGuire
Co G, USAICS

Piercing the Reich, by Joseph E. Persico, New York: The Viking Press, 376 pages, 1979.

Numerous books have been written about espionage operations during World War II. This is understandable due to the fact that intelligence agencies played a large part in military decision-making as Axis and Allied powers recognized their requirements for comprehensive and detailed information to advance their cause.

Piercing the Reich concerns itself with the securing of vital information in Nazi Germany by American intelligence agents. The author uses recently declassified CIA reports dealing with the Office of Strategic Services (OSS) as well as interviews with individuals who participated in the intelligence operations.

Persico views these intelligence operations as a success and notes that the OSS was able to infiltrate nearly 200 agents into Nazi Germany during the latter part of the war. The agents were usually sent to cities of significant military value such as Berlin, Munich, Bremen and Stuttgart. In assessing the success of the OSS operation, the author notes: "When Allied bombers moved, artillery spoke, or troops marched, it was often toward objectives revealed by the heroism and craft of American spies

operating within Germany."

It was not easy to facilitate an intelligence operation of such magnitude and risk. Initially, the British were opposed to the idea because they believed their own intelligence apparatus was adequate.

In addition, because OSS agents infiltrating Nazi Germany would not be able to count on aid from the German populace, it was inevitable that the casualties of such an operation would be heavy. Many agents were captured, killed or reported missing.

Piercing the Reich should appeal to students of military intelligence because it offers insights into the securing of information in a clandestine manner under wartime conditions. It should also interest military historians because of its discussion of some relatively unknown but successful World War II operations.

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Summons of the Trumpet, by
Dave Richard Palmer, Presidio
Press, San Rafael, CA, 1978, 273
pages, \$12.95.

Of the many books which have been published on the Vietnam War since the United States ended its direct involvement in the conflict eight years ago, most have dealt with the socio-political or strategic aspects of the war.

Dave Palmer's *Summons of the Trumpet*, however, is one of few books written concerned with the military aspect of the war. In the very first sentence of his preface, Palmer clearly states his intentions: "This book is the story of America's military involvement in Vietnam—why we entered, what we did, and how we left." Palmer argues that America's military effort was hampered by stringent political controls and the centralization of decision making in Washington, DC.

In *Summons of the Trumpet*, the reader is guided through the history of US involvement in Vietnam, from the economic aid given France prior to Dien Bien Phu through US military involvement and ultimately to President Nixon's Vietnamization policy and the final pullout of American forces.

Palmer discusses the political circumstances surrounding decisions made by policy makers in Washing-

ton, pointing out the effects those decisions had on military actions in Vietnam.

Palmer examines limitations placed on the Air Force during its bombing campaign and those placed on the Army which allowed the communists sanctuary in Cambodia and Laos. These limitations cost the US military freedom to maneuver, forcing it into a war of attrition, one which the American public could not, and would not support.

Palmer effectively supports his thesis that high-level policy decisions affected tactics, using various battles of the war as examples. The battles of Ap Bac, during the advisory years; Ia Drang, while American forces were building; the Iron Triangle, when the enemy fled for the borders; and the Tet Offensive illustrate the problems, and few successes of US forces.

Unfortunately, Palmer does not use footnotes and thus denies interested readers the opportunity to check sources of his quotes and statistics. Neither does Palmer address the possibility that the Tonkin Gulf incident might have been blown out of proportion when he refers to it as a major reason for the escalation of the war. This might cause skeptics to question how deeply Palmer researched areas that might not have supported his argument.

Overall **Summons of the Trumpet** is one of few books that has attempted to objectively consider the war. Palmer's arguments are persuasive, his analysis, sure. **Summons of the Trumpet** provides new insights into the Vietnam War without rehashing old political arguments. It is heartily recommended to the intelligence professional and all students of the Vietnam War.

1LT R. W. Levesque
DTD, USAICS

Nuclear Disaster in the Urals, by Zhores A. Medvedev, W. W. Norton & Company, Inc., 1979.

In a country that keeps secret the number of victims of highway, railroad and airplane accidents, suppression of news regarding a nuclear accident is no surprise. In **Nuclear Disaster in the Urals**, Zhores Medvedev reveals the appalling story of a winter 1957-1958 explosion of buried nuclear waste in the southern Urals which contami-

nated an area hundreds of square kilometers in size.

In pursuing the story of the Urals disaster, Medvedev assesses Soviet publications and other sources for the location, time, cause and scale of the accident. He examines the staggering magnitude of the contamination and its implications for Soviet environmental control and presents an interesting collaborating testimonial from an emigree who knew of signposts along roads in the area (which remains uninhabitable to this day) warning of the danger of radioactivity, urging drivers to go at top speeds through the area and ordering them to remain in their vehicles at all times.

Besides revealing the nuclear disaster itself, Medvedev gives modern analysts with their vast amount of information, technical instruments and computerization "a small lesson in scientific detective work." Indeed, Medvedev's painstaking analysis of the Soviet "open press" is a story in itself and his *a priori* reasoning, in reading through the fog of censorship, provides a lesson in analytic intelligence production.

Despite the tragedy of the disaster, the existence of such an area so extensively contaminated with various radioactive materials offered Soviet scientists an unprecedented opportunity for research. And, like their Western counterparts, Soviet scientists were eager to publish the results of their work. Consequently, they eventually published articles relating to the contaminated area. This is where Medvedev's search began.

Contrary to established international standards describing the methods and conditions of research to ensure the possibility of its replication, the articles dealing with the Urals contamination lacked sections on methodology, such as essential data on size, quantities and locations. The absence of such openness was plainly evident in the works of the research groups studying the Urals disaster.

With his scientific background, Medvedev combines his understanding of Soviet censorship, publishing bureaucracy and scientific community to unravel the vagueness of official publications by capitalizing on censor oversights. With a deductive genius that rivals that of the fictional Sherlock Holmes, Medvedev analyzes data used in related articles to determine levels of radioactivity in different plants and animals and to ascertain the extent

of the contaminated area.

Despite the technical nature of the subject matter, the book is written in terms the layman can understand. The reader moves rapidly through the scientific realities of a contaminated environment to a conclusion that something went terribly wrong in the Urals.

MAJ Richard Armstrong

B-57 Canberra at War 1964-1972, by Robert E. Mikesch, Charles Scribner's Sons, 1980, 160 pages, \$17.95.

The B-57 bomber holds a special place in the history of American Combat aircraft. Not an object of beauty, it nevertheless was a rugged flying machine of sound design and versatility.

B-57 Canberra at War concentrates on the role of the B-57 in Vietnam from 1964-1972, but Mikesch adequately chronicles its history from its first flight in 1949 to its current status in US Air Force inventories and abroad.

The book is easy to read and is full of anecdotes from the author's personal experiences and those of numerous other pilots. The author can write with authority about the B-57 because he was a Canberra pilot for several years.

Although appendices to the book will probably mean a great deal more to readers having personal experience with the B-57, they nevertheless provide such vital statistics as comparisons to contemporary aircraft, specifications, variations and numbers of sorties flown in Southeast Asia.

Military intelligence officers will find the chapters on the "Patricia Lynn" Project (a reconnaissance program implemented in Vietnam); the B-57G night intruders; the Long Wing RB-57Ds and the RB-57Fs especially interesting. Each discussed a variant of reconnaissance aircraft using different cameras, sensors and imaging equipment.

The author has written extensively on historical and technical aviation. The Curator of Aircraft at the Smithsonian Institution's National Air and Space Museum in Washington, DC, Mikesch served in the US Air Force for 21 years and flew several different aircraft. Between 1955 and 1970, he logged more than 2,000 pilot hours in the Martin B-57 Canberra, making him a natural authority on

this airplane.

Anyone interested in military aviation will also enjoy this book as it treats the story of the B-57 Canberra in a non-technical no-nonsense manner. It will, however, be best appreciated by readers who actually worked with the B-57 because the author frequently refers to specific aircraft (by citing tail numbers). In doing so, Mikesch gives his book a personal touch of value to those who were involved with the aircraft.

2LT Timothy M. Kaseman
Co G, USAICS

Battle of the Bulge 1944, by Lieutenant General (Ret.) Sir Napier Crookenden, Charles Scribner's Sons, New York, 1980, 160 pages, \$17.50.

At dawn on 16 December 1944, Hitler launched a desperate offensive against the Western allies. Thirty German divisions, with 2,600 tanks, attacked westward through the Ardennes, along a 50-mile front, against four and a half unsuspecting American divisions. By Christmas Day 1944, leading elements of the German thrust had penetrated more than 50 miles into bitterly contested allied territory. As the Americans recovered from the unexpected blow, they halted and turned the German tide, five miles from the first German objective, the Meuse River. By 27 January 1945, the Germans were pushed back to the lines of 16 December. Never again would Hitler's war machine advance into allied territory.

Battle of the Bulge is related by General Sir Napier Crookenden, who served under British Field Marshal Montgomery during the war. The summary of the battle is based largely upon Dr. Hugh M. Cole's Ardennes volume of **The United States Army in World War II**. The value of this history, however, lies more in its photographs and art prints than in the narrative. It could, perhaps, best be described as a pictorial history of the Battle of the Bulge. More than 270 black and white photographs, paintings and drawings have been reproduced from collections in the United States, Germany and Great Britain. Vividly portraying the battle in its most human aspects, the photographs alone justify the reading of this book. Many are published here for the first time.

One major drawback of the book lies with its maps. There are too few, and those which are included are disappointingly incomplete, busy and fraught with misspellings. This lends some confusion to the text since it is not always clear on the maps where the maneuvers described are taking place.

Nevertheless, on the whole, **Battle of the Bulge** makes worthwhile reading and should contribute to a better understanding of one of the most important battles of World War II.

2LT Randy R. McGuire
Co G, USAICS

Warships of the World: Major Classes, by Bernard Ireland, Charles Scribner's Sons, New York, 1980, 128 pages, \$8.95.

In light of the variety of naval vessels on the world's waterways, Bernard Ireland has taken upon himself the considerable task of compiling a fact sheet on many of the world's major class warships, those surface vessels with a standard tonnage in excess of 5,000 tons.

In his first of three volumes dealing with naval vessels, Ireland defines new developments in warship technology and capabilities. While 50 percent of the book deals with warships of the United States and USSR, vessels from 15 other countries are illustrated and discussed.

Ireland considers modern cruisers, destroyers and aircraft carriers, including the nuclear-powered United States Enterprise and Nimitz. "New breeds" of guided missile frigates and amphibious assault ships are also analyzed and Ireland notes the emergence of the helicopter as a viable anti-submarine weapon with its integration into the naval forces of the world.

In addition to providing extensive data and numerous illustrations, Ireland critiques the changing role of the warship. He examines such features as refined superstructure designs, weapons and propulsion systems which have evolved to facilitate current naval doctrine and tactics.

With **Warships of the World: Major Classes**, Ireland has composed an interesting, fact-filled collection of warship statistics. This book is important reading for those interested in the latest surface warship technology and the capabilities of

the world's modern navies.

1LT John Schmidtbauer
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Modern Combat Vehicles: Chieftain, by George Forty, Charles Scribner's Sons, New York, 130 pages, 1980.

George Forty has successfully put together the first of four volumes dealing with modern combat vehicles. Forty was a member of the 4th Royal Tank Regiment which was equipped with the Chieftain medium tank while he was assigned to the Regimental Headquarters. Forty enlisted the efforts of Leslie Monger to write the first chapter, a detailed report on the components of the Chieftain, which explains why certain gun, turret, motor and suspensions were chosen over other systems.

Forty does a superb job covering the Chieftain proving trials which were held in late 1962. Other chapters are devoted to detailed description and illustration of firepower, protection, mobility and communications. In one of the last chapters, Forty discusses the Chieftain's performance from the perspective of a driver, gunner and loader/operator who describe their respective jobs and give the reader a true sense of the Chieftain.

Modern Combat Vehicles: Chieftain is very impressive for its vivid detail regarding the evolution of the Chieftain from drawing board through the proving trials to field operation in the hands of the tank commander. Forty's book offers the reader a great deal of insight into the complexities of developing a modern armored vehicle to meet speed, mobility, armor protection and mechanical reliability, requirements allowing it to defeat any enemy armor developed in the next 20 years. Diagrams and illustrations show every possible layout of the tank.

With the first of a series of four books dealing with modern combat vehicles, (forthcoming volumes will review the Leopard, Centurion and M48) George Forty has offered a volume of definite interest to the MI professional and the general military audience.

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